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ABSTRACT

This study in 1969-70 investigated morphological proficiency in relation to race, intelligence, and sex in a lower class rural kindergarten population in Florida. Subjects (145), Negro and white, male and female, were grouped in terms of high-, middle-, or low-intelligence using raw scores on a portion of the Kuhlmann-Anderson Intelligence Test. The subjects were then individually administered a 20-item adapted version of the Berko Morphology Test, with responses taped and transcribed in writing. Analysis of data included item and factor analysis of the adapted Berko Test, Multiple linear regression analysis, and non-statistical content analysis of test responses. Results of this study in a population controlled for socio-economic level, geographic distribution, and age-grade level showed a significant relationship between morphological proficiency and intelligence and race. No significant relationship between language proficiency and sex was found. Implications suggest the need for additional refined test instruments for intelligence and language, appropriate for use with lower class rural, southern subjects, as well as a need for a descriptive linguistic study of adult speech in the rural south. (Author/FWB)

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A COMPARATIVE SURVEY OF THE MORPHOLOGY OF LOWER CLASS RURAL KINDERGARTEN STUDENTS IN ALACHUA COUNTY, FLORIDA

By

Phyllis Palmer Vogel

AL 002 692

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I. INTRODUCTION

In America today many people cannot read, write, speak, or comprehend Standard English[1] to an extent necessary for their own well-being. The language they do employ, called "Nonstandard English," often represents the rich cultural heritage of a minority group--a regional, racial, religious, familial, or other minority. But unfortunately, those who use Nonstandard English limit the scope and effectiveness of their communication, so that they labor under a language handicap which contributes to their social, economic, cultural, and psychological deprivation.

In what amounts to a multi-dialectal situation, the schools--especially those in urban centers--have been relatively unsuccessful in their efforts to teach Standard English to lower class children from diverse, Nonstandard linguistic backgrounds.[2] One reason for the schools' failure is that current methods of teaching Standard English have developed apart from knowledge or appreciation of Nonstandard speech dialects.[3] And in the past in conjunction with

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[1]Standard English is the language used by educated people; it is the language of church, school, government, law, and all the communications media; it has no intrinsic superiority, but it may have social prestige. See Herbert J. Muller, "Good English," in The Uses of English (New York, 1967), pp. 57-74.

[2]Thomas J. Creswell, "The Twenty Billion Dollar Misunderstanding," in Social Dialects and Language Learning, ed. Roger W. Shuy (Champaign, 1964), p. 69.

[3]Creswell, loc. cit.

inadequate knowledge of Nonstandard variations, teachers have tended to condemn as "wrong" any speech utterances that did not conform to prescribed rules of Standard English usage.

While it has always been agreed that children need to learn Standard English for certain purposes to function well within the society, it is evident that both they and their teachers need a new perspective for understanding and valuing language differences.[1] Only from such a vantage point can we see the links between language as each child speaks it when he enters school and language as educators hope each child will learn to use it for his self-fulfillment in later life.

Many recent recommendations for needed research in the teaching of English reflect the desire of educators to restructure language-teaching theory and practice in the light of emergent premises. Linguistics, as a science that studied speech but not the speaker,[2] has fostered the evolution of newer sciences, such as psycholinguistics, sociolinguistics, and ethnolinguistics, with language research becoming an interdisciplinary effort. We now have evidence, as a result of that effort, that language proficiency is related to socio-economic status, home environment, and intelligence; we have findings that clarify the relationship between certain aspects of language proficiency and sex differentiation, and between language

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[1]Juanita Williamson, "Report on a Proposed Study of the Speech of Negro High School Students in Memphis," in Social Dialects and Language Learning, ed. Roger W. Shuy (Champaign, 1964), p. 24.

[2]John J. Gumperz, "The Social Group as a Primary Unit of Analysis in Dialect Study," in Social Dialects and Language Learning, ed. Roger W. Shuy (Champaign, 1964), p. 127.

usage and ethnic background.[1] We believe that language and culture are intimately related, with each shaping the other. In seeking a new perspective for language learning and instruction, which, it is hoped will lead to improved materials and teaching practices, researchers are giving top priority to the study of Nonstandard English as it is used within subcultural groups and in relation to the human factors operative in those groups.

Need for this Study

The need for subculture language research was clearly specified by the 1962 Project English Research Conference and reiterated by the 1964 Bloomington Linguistic Conference on Urban School Dialects and Language Learning. In addition, the latter Conference was instrumental in establishing in 1965 a Clearinghouse for Social Dialect Studies, a joint instrumentality of the Center for Applied Linguistics and the National Council of Teachers of English. Within two years of its founding, the Clearinghouse issued descriptions of thirty-six social dialect research studies in progress.[2]

The studies reported by the Clearinghouse exemplify the kinds of research recommended by the Project English Conference: research in language patterns, in the manipulation of those patterns in

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[1]This evidence is presented in Chapter 2 of the present study.

[2]Clearinghouse for Social Dialect Studies, Research in Progress: Social Dialects of English, Report Number Three (Washington, D.C., 1967), ERIC Microfiche ED 012906.

discourse (communication), and in the manipulation of those patterns in aesthetic forms (literature), with the problem to be viewed in the light of cultural interaction.[1]

The present study evolved from these outlined needs for research in English. The problem posed in this study was based on one of the questions asked by the 1962 Conference: What particular usage patterns develop in various social and economic subultures (the bilingual, the rural American, the children from various ethnic subcultures) in this country?

Purpose of this Study

The immediate purpose of this study was to provide information about language usage among a rural southern population, specifically about the participants' morphology in relation to their intelligence, race, and sex. In addition, the study explores nonsense-word testing rather than speech sampling as a linguistic methodology appropriate for finite language operations research.

Statement of the Problem

The present survey, incorporating some features of a quasi-experimental design,[2] investigated the following question: What are the morphological characteristics of the speech of lower class rural kindergarten students in Alachua County, Florida, as measured by the Berko Morphology Test (adapted)?

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[1]"Needed 'Multilevel' Research in the Teaching of English," a discussion summary in Needed Research in the Teaching of English (Washington, D.C., 1963), p. 122.

[2]Donald T. Campbell and Julian C. Stanley, "Experimental and Quasi-Experimental Designs for Research on Teaching," in Handbook of Research on Teaching, ed. N. L. Gage (Chicago, 1963), Chapter 5.

Three approaches to the problem were employed. The first evaluated the morphology instrument. The second determined what relationship, if any, exists between morphology and intelligence, race and sex differentiation in the population studied. The third was a content analysis of Berko Test responses to assess any Non-standard morphology revealed in the study.

Definition of Morphology

Morphology means "the forms and grammatical inflections of words as they undergo modification for tense, number, case, person, etc."[1] For example, in changing a noun from singular to plural, one employs a morphological process. The process is used in speaking and in writing, but the primacy of speech[2] justifies its exclusive study here.

There is ample evidence that morphology and syntax (putting words in order) are two essential language processes mastered by young children initially by imitating more mature speakers.[3] Usually during the third year the process of imitation is supplemented with analogical experimentation, so that the child might be heard experimenting with forms like bringed.[4]

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[1]John B. Carroll, "Language Development in Children," Encyclopedia of Educational Research, ed. Chester W. Harris (New York, 1960), p. 745.

[2]The primacy of spoken language is explained by Albert H. Marckwardt, "Research Methods of the Linguist Which May Be Useful in Educational Research," in Research Design and the Teaching of English, ed. D. H. Russell (Washington, D.C., 1964), ERIC Microfiche ED 001917.

[3]Werner F. Leopold, "Patterning in Children's Language Learning," in Psycholinguistics, ed. Sol Saporta (New York, 1961), p. 357.

[4]Carroll, loc. cit.

Morphological operations seem to vary in complexity. Berko [1] found that children performed better forming plurals of nouns than forming the past tense of verbs, and Carroll[2] stipulates that the period from age three to age eight is characterized by difficulty in learning irregular forms.

The morphology of a child's speech is indicative of the distinction between Standard and Nonstandard forms. In syntactic operations many word orderings are possible, but in morphological operations Standard usage specifies a limited number of forms. The child who says "I looks at the book" is clearly using a Nonstandard verb inflection. The morphology examined in this study was limited to regular, rather than irregular formations, and to those in which Standard English, verified in elementary language arts textbooks and in adult speech consensus, is unambiguously delineated. The morphological forms studied were the plural and the two possessives of the noun, the third person singular present tense of the verb, and the past tense of the verb.[3]

Assumptions

Because of the complexity of language research (Deutsch examined over a hundred variables that affect language usage and

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[1]Jean Berko, "The Child's Learning of English Morphology," in Psycholinguistics, ed. Sol Saporta,(New York, 1961), pp. 359-75.

[2]Carroll, op. cit.

[3]Nonstandard verb and noun forms outnumbered all other Nonstandard forms in a study of freshman dialect usages. S. C. Lin, "Pattern Practice in a Freshman English Program," in Social Dialects and Language Learning, ed. Roger W. Shuy (Champaign, 1964), p. 57.

development),[1] it is necessary to specify certain assumptions inherent in the present study.

1. Morphology, an essential early language process, is also a significant, discrete category of language usage in which Standard and Nonstandard English forms can be discerned and validated.

2. A lower class rural kindergarten population (as later defined) in Alachua County, Florida, exists as part of a "social and economic subculture in this country," as recommended for study by the 1962 Project English Conference.

3. The language of a kindergarten population in this community will be relatively unaltered as yet by formal education; therefore, this variable will be assumed to be controlled.

4. It is possible to measure morphological proficiency among the designated population with the instruments and techniques employed.

Limitations

Limitations of Prior Research and Methodology

Carroll in the 1960 Encyclopedia of Educational Research[2] mentions only two morphology studies. One reason why so few studies are reported may be that morphology is often examined in a broad

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[1]Martin Deutsch, The Role of the Social Class in Language Development and Cognition (Washington, D.C., 1964), ERIC Microfiche ED 001061.

[2]Carroll, op. cit., p. 746.

context of linguistic research and not as a discrete element. The research method of linguistics traditionally has been that of analyzing and categorizing large speech samples, rather than of testing specific kinds of language usage.[1] Extensive sampling is theoretically justified on the grounds that usage will vary greatly in an individual according to the circumstances in which he speaks; therefore, the quantity of speech studied is important. But Berko[2] demonstrated one alternative to extensive speech samples: by using nonsense words, one can construct tests to determine the extent to which "rules" of Standard English have been internalized. Since those "rules" govern morphology, specific testing is a research method as appropriate in this study as speech sampling is in other studies.

Limitations of the Sample

The study is limited to the morphology of 145 lower class rural kindergarten children in Alachua County, Florida.

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[1]Marckwardt, op. cit., p. 43
[2]Berko, op. cit.

II. REVIEW OF RELATED LITERATURE

The language research literature reviewed here is limited to that which pertains to the following: methods of language research; social dialect studies in general; literature related to the variables of social class, intelligence, race, and sex; and specific morphology research.

Methods of Language Research

Carroll[1] describes the problems that have characterized language research. In the first place, linguists have studied language *per se* and have missed opportunities for interpreting their observations in psychological terms. Educational psychologists, on the other hand, have not taken into account the advances in linguistic studies or the units employed in linguistic analysis. In the second place, normative observational data, which abound in the literature, have many shortcomings. Many data are based on observations in naturalistic settings and do not adopt the experimental approach that would make testing possible. Ultimately, as Carroll points out, some sort of testing is needed to determine the limits or ranges of language behavior, such as determining the range of vocabulary, the accuracy of sound production and discrimination, or knowledge of concepts.

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[1]Carroll, *op. cit.*

Other writers concerned about methods of language research also note the shortcomings of traditional linguistic observation. However, Pool[1] notes that although most linguists are still engaged in distinguishing roughly between major and minor patterns of language, there is a beginning of more quantitative work. Some linguists, for example, have begun working with probability models.

In these writings on language research, one senses an awareness of the gap between linguistic methodology and psychological methodology. From that awareness are coming attempts on both sides to bridge the gap. The present study, by limited testing of one aspect of language usage rather than by extensive speech sampling to trace that aspect, takes into account the polarities of traditional language research and explores a possible solution to the problem.

Social Dialect Studies in General

As already noted, interdisciplinary interest in social dialect research is a phenomenon of the past decade. Three sources provide up-to-date information in this new field: the 1964 report of the Bloomington Conference on Urban School Dialects and Language Learning[2] reveals the linguists' approach to the subject; the Clearinghouse for Social Dialect Studies, established in 1965, regularly reports on ERIC Microfiche the summaries of research underway at leading institutions throughout the country;[3] and various individual Microfiche

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[1]I. Pool, "Trends in Content Analysis Today: A Summary," in Psycholinguistics, ed. Sol Saporta (New York, 1961), p. 324.

[2]Shuy, op. cit.

[3]See, for example, ED 012906, ED 010876, ED 010690.

studies, noticeably increasing in number as each new Index is published, report in detail some excellent research studies. Pertinent literature from the last two of these sources will be included in the following reviews, which are related to specific variables treated in the present study.

Social Class and Language

In an early definitive study, McCarthy[1] showed that where group differences in social class level are most pronounced, differences in linguistic skills of children of diverse social classes are greatest.

In a study of language development in 480 three to eight-year-old subjects, ranked by socio-economic level according to the Minnesota Scale of Paternal Occupations, Templin[2] found that for nearly all measures, upper socio-economic-level subjects consistently performed at a statistically significant higher level.

Hurst and Jones,[3] in a study of 1,209 Negro freshmen college students, determined the socio-economic status of subjects by analyzing four factors: occupation of household head; his or her education; house size and type; and family income. Subjects designated as high-, middle-, or low-social status were evaluated on speech intelligibility

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[1]Dorothea McCarthy, The Language Development of the Preschool Child, Institute of Child Welfare Monographs Series, No. 4, University of Minnesota Press, 1930.

[2]Mildred C. Templin, Certain Language Skills in Children: Their Development and Interrelationships (Minneapolis, 1957), p. 147.

[3]Charles G. Hurst, Jr., and Wallace L. Jones, "Psycho-social Concomitants of Sub-standard Speech," Journal of Negro Education, 35 (Fall, 1966), pp. 409-421.

by a panel of trained judges using the Morrison interval scale. Data revealed that subjects in the high proficiency intelligibility group tended to come from families resembling middle-class white Americans, with at least one parent who was a professional, and with a combined family annual income above $15,000. Low proficiency speakers tended to have parents who were semi-skilled, or untrained laborers with a high school education or less, with generally a combined family income well below the national average.

In a cross-sectional study of 292 first and fifth grade children of various racial and social class backgrounds (and an extended population of 2,500), Deutsch[1] assessed over a hundred variables related to language. He found significant socio-economic and race differences seen in measured variables at the first grade level, and noted that they become more marked as the child progresses through school. On at least twelve IQ measures, he found at the first grade level a significant relationship between lower social class status and poorer test performance.

Barritt, et al.,[2] compared the psycholinguistic functioning of educationally deprived and educationally advantaged children, using the Illinois Test of Psycholinguistic Abilities. They reported,

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[1]Martin Deutsch, The Role of Social Class in Language Development and Cognition (Washington, D.C., 1967), ERIC Microfiche ED 001061.

[2]Loren S. Barritt, et al., A Comparison of the Psycholinguistic Functioning of Educationally Deprived and Educationally Advantaged Children (Washington, D.C., 1969), ERIC Microfiche ED 022537.

among other findings, a significant difference between advantaged and disadvantaged children on a task which measures what appear to be grammatical habits.

Race and Language

In the most extensive longitudinal language project reported in the literature (and one which is still underway), Loban[1] found that deviations from Standard English usage, determined by the speech sampling method, were related to ethnic origin and also to socio-economic status. His computation of deviations per thousand words of spoken volume for three heterogeneous groups (High Caucasian, Low Caucasian, and Low Negro) showed that at the kindergarten level, on the agreement of subject and verb in the third person singular (excluding the verb to be), the Low Negro group had 12 times as much difficulty as the Low C group and over a hundred times as much difficulty as the High C group. On various other deviations, the High C group had least difficulty, the Low C had some difficulty, and the Low Negro group had the most difficulty.

Deutsch[2] found that race differences are present and are in the direction of poorer verbal ability performance by Negro children, but of 43 possible comparisons for a first grade group, they were reflected in only eight of the comparisons.

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[1]Walter Loban, Language Ability: Grades 7, 8, and 9 (also reports earlier findings) (Washington, D.C., 1964), ERIC Microfiche ED 001275.

[2]Deutsch, op. cit.

An emergent literature, represented here by three studies, considers the question of subculture language as "different" language or "deficient" language, with emphasis on Negro dialectology. Bailey[1] contends that southern Negro speech differs from other southern speech because its deep structure has its origins in Proto-Creole grammatical structure. Cazden[2] reviews interdisciplinary literature and concludes that on the basis of present knowledge we cannot resolve the issue of whether language used by children in various subcultures is different or is in some manner deficient.

Baratz[3] administered a repetition task involving Standard and Nonstandard English sentences to disadvantaged Negro and lower middle class white children. Negro children performed significantly better than white children on the Nonstandard stimuli. The converse was true for Standard sentences. She interprets results of her research to indicate that black children are generally not bi-dialectal; that there are two dialects involved in the educational complex of Negro children; that there is evidence of interference from their own dialect when Negro children attempt to use Standard English; and that language assessment of disadvantaged Negro children must involve measures of their knowledge of Nonstandard English as well as additional measures of their knowledge of Standard English.

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[1]Beryl L. Bailey, "Toward a New Perspective in Negro English Dialectology," American Speech, 40 (October, 1965), pp. 171-177.

[2]Courtney B. Cazden, "Subcultural Differences in Child Language: An Interdisciplinary Review," Merrill-Palmer Quarterly of Behavior and Development, 12 (July, 1966), pp. 185-219.

[3]Joan C. Baratz, "A Bi-dialectal Task for Determining Language Proficiency in Economically Disadvantaged Negro Children," Child Development, 40 (September, 1969), pp. 889-901.

Baratz points out that there are three main viewpoints in the literature concerning the linguistic system of economically disadvantaged Negro children: (1) that these children are verbally destitute, not yet having developed a functionally adequate or structurally systematic language code; (2) that these children have systematic but underdeveloped language behavior which leads to cognitive deficits; and (3) that these children have a language system which is fully developed but different from that of Standard English. Her study favors the third viewpoint. In addition, she notes that the way we characterize the language system of the majority of low-income Negro children is vitally important for the kinds of programs we develop to deal with language handicaps.

Recent descriptive linguistic studies by Labov[1] are frequently cited in the literature as works that form the cornerstone of social dialectology, or sociolinguistics. He notes that although there are "pressures against the recognition, description, or even mention of Negro speech patterns . . . the existence of patterns of Negro speech is a linguistic and social reality in the United States today."[2]

Sex and Language

Many studies have influenced the generally accepted view that girls are superior to boys in language development (McCarthy,[3]

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[1]See, for example, William Labov, "Phonological Correlates of Social Stratification," American Anthropologist, 66 (December, 1964), pp. 1-186.

[2]William Labov, "Some Sources of Reading Problems for Negro Speakers of Nonstandard English," in New Directions in Elementary English, ed. Alexander Frazier (Champaign, 1967), p. 143.

[3]McCarthy, op. cit.

Fisher,[1] Loban[2]). Girls have been shown to articulate clearly at a younger age, to speak in sentences earlier, to use less slang, and to have more extensive vocabularies, as well as to be more talkative. Templin,[3] however, found that although girls tended to earn higher scores more often than boys did on the language measures she used, the differences were not consistent and rarely were significant. At the separate age levels, few significant differences were obtained. Girls did tend to be superior in articulation and boys in word knowledge. Templin conjectures that changes in child-rearing practices during the last twenty-five years may account for a narrowing of the differences of boys' and girls' language abilities. Berko[4] found no significant difference between boys' and girls' performances on a test of morphology.

Edmonds,[5] in a study of eleventh grade pupils from 66 southern unaccredited high schools, used the Otis I.Q. scores and SCAT Verbal Ability scores to investigate sex differences in the verbal ability of socioeconomically depressed groups. Results indicated that sex cannot be assumed to be a valid predictor of verbal ability. However, within-group differences among lower class groups were significant.

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[1]Mary Fisher, Language Patterns of Preschool Children, Child Development Monographs, No 15, 1934.

[2]Loban, op. cit.

[3]Templin, op. cit.

[4]Berko, op. cit.

[5]William S. Edmonds, "Sex Differences in the Verbal Ability of Socioeconomically Depressed Groups," Journal of Educational Research, 58 (October, 1964), pp. 61-64.

Intelligence and Language

Warden[1] found that in trying to trace a maze they could not see (using a stylus), subjects who verbalized the details required an average of 30 trials; those who depended on visual memory, 68 trials; and those who depended on kinesthetic "feel," 124 trials.

Loban[2] found that the highest correlation in his study was between vocabulary and intelligence, with a correlation of .844. He suggests that vocabulary, success with group tests of intelligence, and proficiency with language constitute a cluster of traits. He also found that at all grades, those who read well also write well, have the highest oral language ratings, and perform best on listening tests.

Iscoe and Pierce-Jones[3] in a study of 132 Negro and 135 white children measured intelligence on the Wechsler Intelligence Scale for Children Test and divergent thinking on the Unusual Uses Test. They found that intelligence measured by WISC is related to divergent thinking scores for Negro children to about the same low, but statistically significant, degree as for white children. They found also that Negroes had significant higher overall ideational fluency scores on divergent thinking, and they suggest that because divergent thinking tests sample different intellectual functions than conventional tests of mental ability, they may afford an advantage to the Negro child.

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[1]Carl John Warden, "The Relative Economy of Various Modes of Attack in the Mastery of a Stylus Maze," Journal of Experimental Psychology, 7 (1924), pp. 243-275.

[2]Loban, op. cit.

[3]Ira Iscoe and John Pierce-Jones, "Divergent Thinking, Age, and Intelligence in White and Negro Children," Child Development, 35 (September, 1964), pp. 785-797.

Morphology Research

Berko[1] tested 28 boys and 28 girls, ages four to seven, for knowledge, conscious or unconscious, of morphological rules. Using nonsense words to avoid evoking a memorized response, she created 27 picture cards designed to test ability to form plurals, possessives, progressive and past verb tenses, and third singular verb forms. Test items were validated by means of adult consensus in response. Children's responses to each item were tabulated according to percentage of correct answers and compared first for sex differences and then for pre-school--first grade differences.

Berko found no significant difference between girls' and boys' performances; she found that first graders did significantly better than pre-schoolers on slightly less than half of the test items.

One major value of Berko's study lies in the instrument, employing nonsense words, that she created. As already discussed, there would appear to be areas of language research in which testing is appropriate or could supplement speech sampling. Morphology is one such area. Responses to morphology testing will be either Standard or Nonstandard, analagous to "right" or "wrong" facilitating computations. And by using nonsense words, the examiner controls to a great extent the variable of situational contest, as well as recall.

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[1]Berko, op. cit.

Shriner[1] matched two groups of pre-school children 25 culturally disadvantaged and 25 culturally advantaged, by mental age and compared them in their ability to apply morphological rules to unfamiliar situations, Each subject was administered the Peabody Picture Vocabulary Test, a picture articulation test, and a 30-item morphology test. The morphology test was constructed to measure both receptive and expressive aspects of morphology. A comparison of total morphology test mean scores between the groups revealed no statistically significant difference. To locate possible significant differences obscured by pooling mean scores, additional computations were made with other variables. Within-group and between-group comparisons were made which looked for differences between males and females, subtest items, and receptive vs. expressive abilities. No significant differences were found. Several hypotheses were advanced to account for the lack of significant differences between the two groups and disregarded as untenable. It was suggested that when relevant variables are controlled, and with respect to the morphological language abilities measured in this study, the label culturally disadvantaged and culturally advantaged may be a misnomer.

From this brief description, the only available report on Shriner's study, it is not possible to evaluate his findings.

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[1]Thomas H. Shriner, Morphological Structures in the Language of Disadvantaged and Advantaged Children, No. 11 in Clearinghouse for Social Dialect Studies Report No. 3 (Washington, D.C., 1967), ERIC Microfiche ED 012906.

Summary

The relationship between social class (defined as economically disadvantaged or advantaged, educationally disadvantaged or advantaged, etc.) and language proficiency is well documented in the literature except for Shriner's morphology study.

The relationship between race and language is the subject of a proliferating literature. Significant differences in language proficiency along racial lines are found in Negro-white studies, such as those by Loban and Deutsch.

Baratz pointed out three commonly held views about the language of economically disadvantaged Negro children: that the children have no functionally adequate or structurally systematic language code, that they have systematic but underdeveloped language behavior leading to cognitive deficits, or that they have a language system that is fully developed but different from Standard English.

Current findings on sex differentiation in relation to language proficiency seem to contradict earlier findings: Templin, Berko, and Edmonds in recent studies found no significant differences that would support the formerly accepted belief in female language superiority.

The relationship between intelligence and language proficiency is supported in the literature. Morphology, an aspect of language usage seldom studied in discrete form, was found in the literature to have been examined in the light of sex and status variables but not of race and IQ variables. The present study attempts to refine

prior morphology work by taking into account the four variables--sex, status, race, and intelligence.

III. DESIGN OF THE STUDY

The problem investigated in this study is: What are the morphological characteristics of the speech of lower class rural kindergarten students in Alachua County, Florida, as measured by the Berko Morphology Test (adapted)?

Three approaches were employed. First, the Berko Morphology Test was subjected to item analysis and factor analysis. Second, a multiple linear regression analysis was used to determine the relationship among morphological proficiency and intelligence, race, and sex differentiation in the population studied. The third approach consisted of a nonstatistical content analysis of Berko Test responses, designed primarily to investigate any Non-standard morphology revealed in the study.

As the literature has demonstrated, the great number of variables related to language development and the contradictory research findings render unwise any positive predictions about relationships among language proficiency and intelligence, race, and sex. Hence, the following hypotheses are stated in the null form.

General Hypotheses

1. There is no difference in the morphological proficiency of high-, middle-, and low-intelligence lower class rural

kindergarten students in Alachua County, Florida, as measured by the Berko Morphology Test (adapted).

2. There is no difference in the morphological proficiency of Negro and white lower class rural kindergarten students in Alachua County, Florida, as measured by the Berko Morphology Test (adapted).

3. There is no difference in the morphological proficiency of male and female lower class rural kindergarten students in Alachua County, Florida, as measured by the Berko Morphology Test (adapted).

4. No Nonstandard morphological patterns are found in the speech of lower class rural kindergarten students in Alachua County, Florida, as determined by content analysis of responses to the Berko Morphology Test (adapted).[1]

Statistical Hypotheses

1. There are no statistically significant differences among the means of the scores on the Berko Morphology Test at the .05 level of confidence for the three intelligence-level groupings.

2. There is no statistically significant difference between the means of the scores on the Berko Morphology Test at the .05 level of confidence for the two races.

3. There is no statistically significant difference between the means of the scores on the Berko Morphology Test at the .05 level of confidence for the two sexes.

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[1]Hypothesis No. 4 will be answered by a logical rather than a statistical operation.

4. There is no statistically significant interaction effect at the .05 level between intelligence and race.

5. There is no statistically significant interaction effect at the .05 level between intelligence and sex.

6. There is no statistically significant interaction effect at the .05 level between race and sex.

7. There is no statistically significant interaction effect at the .05 level among intelligence, race, and sex.

The Sample

The sample consisted of 145 lower class rural kindergarten students, Negro and white, male and female, in Alachua County, Florida (from a total rural kindergarten population of 370 children of all class levels). Randomization was impeded by administrative designation in September, 1969, of participating schools: five of eight elementary schools in the county were designated as participants, their selection influenced, of necessity, by school integration plans.

The rural status of the population was determined according to the location of participating schools in towns in Alachua County not exceeding a population of 2,500[1] and/or on the basis of the Coleman Report distinction between Metropolitan and Nonmetropolitan areas.[2]

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[1]As defined in Encyclopedia of Educational Research, ed. Chester W. Harris (New York, 1960), p. 1166.

[2]James S. Coleman, et al., Equality of Educational Opportunity (Washington, D.C., 1966), p. 39.

Lower class status was established according to any two of the following three criteria: (1) U.S. Government ESEA Title I family income stipulations,[1] (2) family on welfare, and (3) child enrolled in the Free Lunch Program. No access to school records was given to this researcher. County administrative personnel instructed all kindergarten teachers in the five participating schools to provide names of all children meeting two of the above criteria and to permit testing of those children.

Paternal occupation, frequently used to determine class status, was judged inappropriate for this study because so many potential subjects existed in a matriarchal environment. The class status variable, which has been shown to be significantly related to language proficiency, was considered to be controlled in this study.

A kindergarten population was used in order to examine the child's "native" morphology--the speech with which he enters school. Ideally, subjects would have been rural pre-school children, but such a population was not accessible. No subjects were younger than five years of age or older than seven, the age range for which intelligence scores are computed on the Kuhlmann-Anderson Test, Seventh Edition, Booklet K.

Final distribution of the sample by race and sex is shown in Table 1. Statistical procedures used in data treatment allowed for inequality of numbers by race and sex.

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[1]H. S. Rowland and R. L. Wing, eds., Federal Aid for Schools (New York, 1967), pp. 348-349.

TABLE 1

FINAL DISTRIBUTION OF THE SAMPLE
BY RACE AND SEX

White		Negro	
Male	Female	Male	Female
19	35	43	48

Procedure

The second week in October, 1969, all kindergarten teachers in the five designated schools verified lower class status, age, sex, and race of all prospective subjects, submitting this information on cards to the researcher, who later added code identification numbers, intelligence test scores, morphology test scores, and morphology test item data.

Beginning the third week in October, 1969, the Kuhlmann-Anderson Intelligence Test, Seventh Edition, Booklet K (as later described) was administered in part to 173 subjects, all of whom fulfilled criteria requirements. This sample was later reduced to the final sample of 145 subjects for administration of the Berko Morphology Test, at which time 2 subjects had moved, 7 refused the language test, and 19 were absent.

At the first Kuhlmann-Anderson testing session, many pitfalls of group testing were evident and two particular problems required that the testing program be revised. In the first place, no subject completed the test parts in the time allocated by the Test Manual. Moreover, the apparent attention span limit of even the better performers was established at 40 minutes, a span noted independently both by the examiner and by an assisting teacher.

Because additional testing sessions with each group were not permitted, and in view of the fact that the test was not being administered to establish national norm comparisons but rather to group subjects into high-, middle-, or low-intelligence groups within the population studied, the test was limited to the first 21 items, generally requiring a 40-minute test session.

Testing was completed early in December, 1969, with a frequency distribution of raw scores shown in Table 2, grouped for convenience into three levels.

Between mid-December, 1969, and February 1, 1970, the adapted Berko Morphology Test was individually administered to the final sample of 145 subjects. Test responses by each child to each of 20 test items were both taped and transcribed in writing by the examiner. Written transcriptions were used for scoring Standard ("right"), Nonstandard ("wrong"), and No Response answers. Tapes were employed to facilitate content analysis of responses. A frequency distribution of raw scores is shown in Table 3.

Instrumentation

The first 21 items from the Kuhlmann-Anderson Intelligence Test, Seventh Edition, Booklet K, were administered to 173 rural kindergarten students between October and December, 1969. All test items in Booklet K are pictures, increasing in difficulty and including both verbal and spatial items. Only verbal items were used, in accordance with testing limitations previously described.

Each subject was given a test booklet with his name on it, a pencil, and a marker to follow down the page. The examiner read a description for each item, according to Test Manual instructions, and subjects responded by marking a dot on each picture. For example, while subjects looked at a picture of a coat with three sleeves, the examiner read: "Look at the coat. Take your pencils. Make a dot on the part that is wrong." Raw scores were obtained by counting the number of correctly placed dots for the 21 items.

TABLE 2

DISTRIBUTION OF RAW SCORES ON 21 ITEMS OF
THE KUHLMANN-ANDERSON TEST, BOOKLET K

	Score	Frequency
High	21	4
	20	5
	19	6
	18	10
	17	9
	16	9
Middle	15	8
	14	4
	13	6
	12	7
	11	2
	10	3
	9	7
	8	8
	7	2
	6	2
Low	5	8
	4	8
	3	6
	2	12
	1	12
	0	7

TABLE 3

DISTRIBUTION OF RAW SCORES ON
ADAPTED BERKO MORPHOLOGY TEST

Score	Frequency
20	
19	
18	
17	
16	2
15	
14	2
13	3
12	7
11	8
10	4
9	12
8	12
7	11
6	13
5	10
4	12
3	13
2	14
1	14
0	8

Validity evidence for the Kuhlmann-Anderson Sixth Edition Tests indicates that they discriminate item-by-item between the performance of groups of pupils differing by small, successive increments of chronological age and also that they discriminate significantly between average and retarded or accelerated pupils over a wide range and within each grade from first to twelfth. In other evidence reported by the authors, Allen, Hilden, and Skeels found correlations of .84 between the Sixth Edition IQ's and the "educational quotient" on widely used achievement batteries.

To incorporate Sixth Edition validity into the Seventh Edition, the authors subjected trial form contents to item analyses, using the pupils' MA on the Sixth Edition tests as the criterion. Each item was rejected or retained on the basis of how well it discriminated between the top and bottom 27 percent of the item-analysis group. The median correlations between the items and the criterion range from .37 to .56 for Booklet K.

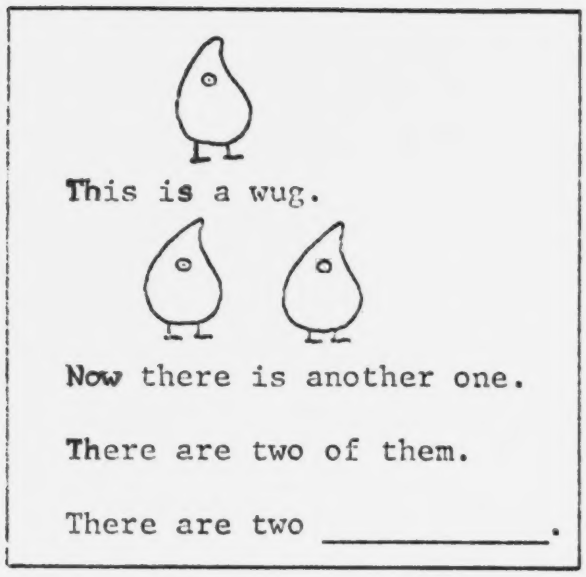
Further evidence of construct and concurrent validity of the Seventh Edition Booklet K is found in correlations of IQ's, scores, and MA's with the results of the Sixth Edition K Booklet, with those of other recognized tests of mental ability, of reading readiness and of academic achievement.

Evidence of predictive validity is found in comparisons between Kuhlmann-Anderson Seventh Edition Booklet K administered in kindergarten and first grade administering of the Otis Quick-Scoring Mental Ability Test (r, .62); the Lee-Clark and Gates Reading Readiness Tests (r, .60, .54, .56); and the Metropolitan Reading Readiness Test (r, .60).

Evidence for the reliability of scores for the K Booklet, Seventh Edition, is provided by test-retest (within two months) reliability of .85; odd-even score reliability of .95; and .77 reliability for IQ's for restricted age-ranges of three months. Reliabilities indicate that consistent performance on the test booklet may be anticipated.

No evidence was found on item difficulty relating to the vocabulary level of verbal-content items for Booklet K.

In the month following the Kuhlmann-Anderson Test the Berko Morphology Test, adapted (see Appendix A), was individually administered to 145 subjects, with responses taped and transcribed in writing by the examiner. The Berko test is designed to measure the extent to which a child has internalized morphological "rules" of Standard English. The test, which required 15 minutes to administer, employs picture cards with drawings of fictional creatures and typed captions consisting of nonsense words to be read to each subject by the examiner. Nonsense words are used to avoid recall of English words which a child might have memorized without internalizing any concepts that govern morphological inflections. The following is an example of the test items:



Standard English responses for all items were validated from elementary language arts textbooks and from consensus (unanimous response of a selected group of university-educated adults). In terms of Standard English, responses are either "right" or "wrong" by tradition, but for this study, in keeping with the current linguistic emphasis on avoiding such judgmental labels, responses were labeled "Standard," "Nonstandard," or "No Response."

The Berko Morphology Test was chosen for use because it is the only test of its kind, employing nonsense words, that appeared in published form in the literature reviewed for this study. Another series of tests, the Illinois Test of Psycholinguistic Abilities (ITPA), referred to in other literature, has parts that pertain to morphology but its cost was deemed prohibitive for this study.

Permission to use the Berko Test was granted by its author, Dr. Jean Berko Gleason, Cambridge, Massachusetts, in a letter dated October 30, 1969. In the same letter Dr. Gleason granted permission to "modify the items in any way that seems appropriate," and thereafter forwarded copies of a set of the test picture cards.

In this study the Berko Test was modified to clarify three items deemed ambiguous for the purposes of this research and to exclude some items for which a response could have multiple interpretations rather than the Standard-Nonstandard interpretation. For example, the nonsense word "heaf," appearing in the original test, can be pluralized as "heafs" or "heaves," and it was omitted in favor of more regular noun plural formations.

Also omitted from this study were items designed to measure word-compounding ability and compound-analysis ability. In many cases the problem of what actually constitutes a compound word has never been solved.[1] Two items (12, 20) were added by the researcher to replace omissions. They adhere to morphological patterns already established by other items in the test.

Item difficulty and item discrimination computations, performed after test administration, required rejection of one noun plural test item (2) which proved to be too difficult and failed to discriminate satisfactorily, as shown in Chapter 4.

No statistical data on validity or reliability were given by the author of the Berko Test, which is the only test of its kind available.

Treatment of the Data

The statistical procedures used to evaluate the Berko Morphology Test were item difficulty computations, item discrimination computations, and factor analysis.

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[1]Marckwardt, op. cit., p. 46.

The statistical procedure used to determine the relationship among morphological proficiency and intelligence, race, and sex in the population was a multiple linear regression analysis.

The nonstatistical procedure used to analyze responses to test items was content analysis.

IV. RESULTS AND ANALYSES

This chapter reports the findings of the statistical evaluation of the adapted Berko Morphology Test; the results of a multiple linear regression analysis used to determine the relationship among morphological proficiency and intelligence, race, and sex; and results of a nonstatistical content analysis of test item responses.

1. Instrument Analysis

Item Analysis

Items on the adapted Berko Morphology Test were subjected to item difficulty analysis and item discrimination analysis according to the following formulas:

$$\text{Item difficulty, } \frac{N_u \neq N_L}{N_t}$$

$$\text{Item discrimination, } \frac{N_u - N_L}{N_t}$$

in which N_u = upper 27% of the test respondents, N_L = lower 27% of the test respondents, and N_t = number of respondents on a given item.

Items above or below the plus or minus .5 range were deemed unacceptable, and as a result one item was rejected (2, "gutches"), a noun plural formation at the .0277 level. This item was the only

one of its kind in the test ending in the difficult "ch" sound. It was successfully pluralized by only 2 of 145 subjects.

Factor Analysis

A factor analysis was performed on the adapted Berko Morphology Test from data gathered on subjects participating in this study. Upon analysis, no particular factor emerged. The absence of any emergent factors may be due in part to an unequal distribution of the dichotomous data. It may also be explained in part, perhaps, by the fact that the instrument was used across race. If the latter is the case, racial difference in language is supported in the literature by Baratz, Labov, and others[1] who have demonstrated that Negro dialects are systematic and fully functioning but greatly different from (and according to Bailey,[2] of different origins from) Standard English.

2. Multiple Linear Regression Analysis

A multiple linear regression analysis[3] was used to investigate the relationship among morphological proficiency and intelligence, race, and sex, and the interaction effects between and among the variables. A full model linear vector equation is developed for the hypothesis under investigation. A restricted equation is derived so that the question being asked is stated in terms of equality or differences among coefficients, with multiple correlation coefficients

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[1]See Chapter II.

[2]Bailey, loc cit.

[3]Robert A. Bottenberg and Joe M. Ward, Jr., Applied Multiple Linear Regression (Springfield: Clearinghouse for Federal Scientific and Technical Information), 1963.

determined for the full and the restricted models. From these coefficients, an F is derived from the formula:

$$F = \frac{(q_2 - q_1 \;/\; (df)_1}{q_1 \;/\; (df)_2} \qquad \text{where}$$

q_1 = minimized error sum of squares obtained from an attempt to express the observed values in vector y as a linear combination of an unrestricted set of predictors.

q_2 = minimized error sum of squares obtained from an attempt to express observed values in vector y as a linear combination of a restricted set of predictors that express an hypothesis.

$(df)_1$ = a number related to (and sometimes equal to) the difference between the number of unknown parameters to be estimated in the unrestricted linear combination and the number of unknown parameters in the restricted linear combination.

$(df)_2$ = a number related to (and sometimes equal to) the difference between the number of elements in the vectors and the number of unknown parameters to be estimated in the unrestricted linear combination.[1]

[1] Ibid., p. 47.

The F statistic generated by this method can be used to determine the significance of each hypothesis studied. In this report the .05 level of significance was used throughout as the criterion level for the rejection of a hypothesis.

The variables investigated for their influence on students' morphological proficiency were intelligence, race, and sex. To study the variable of intelligence the sample of 145 subjects was divided into three intelligence categories according to raw scores on 21 items of the Kuhlmann-Anderson Intelligence Test, Booklet K. Scores 0 through 5 constituted the low group, 6 through 15 the middle group, and 16 through 21 the high group.

Table 4 illustrates the partitioning of the total group into 12 categories according to intelligence grouping, race, and sex.

TABLE 4

NUMBER OF STUDENTS IN EACH OF THE TWELVE CATEGORIES GROUPED BY INTELLIGENCE, RACE, AND SEX

		Low	Middle	High
Negro	Male	22	9	12
	Female	25	21	2
White	Male	1	10	8
	Female	5	9	21

Analysis of Scores on Adapted Berko Morphology Test

The interpretation of the data begins with an analysis of mean scores on the Berko Morphology Test (Table 5) in relation to

intelligence, race, and sex, in that order, and proceeds to an analysis of four interactive effects between and among the variables.

TABLE 5

MEANS OF ALL GROUPS ON ADAPTED BERKO MORPHOLOGY TEST

		Low	Middle	High
Negro	Male	3.545	3.889	6.750
	Female	3.360	4.190	9.000*
White	Male	6.000**	6.800	9.500
	Female	5.200	8.333	10.143

The first hypothesis tested was the following: There are no statistically significant differences among the means of the scores on the adapted Berko Morphology Test at the .05 level of confidence for the three intelligence-level groupings. Table 6 presents the mean scores of the three intelligence groupings.

TABLE 6

MEAN SCORES GROUPED BY INTELLIGENCE ON ADAPTED BERKO MORPHOLOGY TEST

	Low	Middle	High
Mean Scores	3.660	5.429	9.023

*Sample size of two.
**Sample size of one.

The following F-test values were produced by the regression program:

DF1 = 2 DF2 = 142

F = 33.82

The probability of obtaining the values in the full model by random sampling from populations in which the hypothesis is true is 0.000000.

Since the probability of obtaining the values in the full model from the hypothesized population delineated by intelligence grouping is less than the criterion value .05, the hypothesis was rejected.

An examination of the means of groupings by intelligence (Table 7) reveals that the F-test significance is primarily attributable to the presence of a different mean for each intelligence group.

TABLE 7

RANKED MEANS AND STANDARD ERROR OF MEANS GROUPED BY INTELLIGENCE

	Means	Standard Error
Low	3.660	.388
Middle	5.429	.470
High	9.023	.540

The second hypothesis tested was the following: There are no statistically significant differences between the means of the scores

on the adapted Berko Morphology Test at the .05 level of confidence for the two races. Table 8 presents the mean scores of the two races.

TABLE 8

MEAN SCORES GROUPED BY RACE ON ADAPTED BERKO MORPHOLOGY TEST

	Negro	White
Mean Scores	4.220	8.593

The following F-test values were produced by the regression program:

DF1 = 1 DF2 = 143

F = 61.42

The probability of obtaining the values in the full model by random sampling from populations in which the hypothesis is true is 0.000000.

Since the probability of obtaining the values in the full model from the hypothesized population delineated by race is less than the criterion value .05, the hypothesis was rejected.

An examination of the means of groupings by race (Table 9) reveals that the F-test significance is primarily attributable to the fact that the Negro mean is significantly less than the white mean.

TABLE 9

RANKED MEANS AND STANDARD ERROR OF MEANS
GROUPED BY RACE

	Means	Standard Error
Negro	4.220	.325
White	8.593	.475

The third hypothesis tested was the following: There are no statistically significant differences between the means of the scores on the adapted Berko Morphology Test at the .05 level of confidence for the two sexes. Table 10 presents the mean scores of the two sexes.

TABLE 10

MEAN SCORES GROUPED BY SEX ON ADAPTED
BERKO MORPHOLOGY TEST

	Male	Female
Mean Scores	5.548	6.072

The following F-test values were produced by the regression program:

DF1 = 1 DF2 = 143

F = 0.65

The probability of obtaining the values in the full model by random sampling from populations in which the hypothesis is true is 0.421878.

Since the F produced was not significant, the hypothesis was not rejected.

An examination of the means of groupings by sex (Table 11) shows that there is no apparent difference in the means of these groupings.

TABLE 11

RANKED MEANS AND STANDARD ERROR OF MEANS
GROUPED BY SEX

	Means	Standard Error
Male	5.548	.493
Female	6.072	.425

Upon completion of the analysis of the variables of intelligence, race, and sex, attention was given to the interaction effects between and among these variables. The first interaction hypothesis tested was as follows: There is no statistically significant interaction effect at the .05 level between intelligence and race. Table 12 presents the mean scores grouped by intelligence and race.

TABLE 12

MEAN SCORES GROUPED BY INTELLIGENCE AND RACE
ON ADAPTED BERKO MORPHOLOGY TEST

	Low	Middle	High
Negro	3.447	4.100	7.071
White	5.333	7.526	9.966

The regression produced the following F-test values:

DF1 = 5 DF2 = 139

F = 21.09

The probability of obtaining the values in the full model by random sampling from populations in which the hypothesis is true is 0.000000.

Since the probability of obtaining the values in the full model from the hypothesized population delineated by intelligence and race is less than the criterion value .05, the hypothesis was rejected.

Ranked means and standard error of means were grouped by intelligence and race (Table 13). The following mean differences were calculated: Negro Low minus White Low equals -1.886; Negro Middle minus White Middle equals -3.426; and Negro High minus White High equals -2.895. The F-test significance is attributed to the mean differences of the Negro Low minus White Low vs. Negro Middle minus White Middle, and the Negro Low minus White Low vs. Negro High minus White High.

TABLE 13

RANKED MEANS AND STANDARD ERROR OF MEANS
GROUPED BY INTELLIGENCE AND RACE

	Means	Standard Error
Negro Low	3.447	.408
Negro Middle	4.100	.475
White Low	5.333	.448
Negro High	7.071	.952
White Middle	7.526	.739
White High	9.966	.590

The next interaction analysis considered the following hypothesis: There is no statistically significant interaction effect at the .05 level between intelligence and sex. Table 14 presents the mean scores grouped by intelligence and sex.

TABLE 14

MEAN SCORES GROUPED BY INTELLIGENCE AND SEX
ON ADAPTED BERKO MORPHOLOGY TEST

	Low	Middle	High
Male	3.652	5.421	7.850
Female	3.667	5.433	10.043

The regression program produced the following F-test values:

DF1 = 5 DF2 = 139

F = 14.7399

The probability of obtaining the values in the full model by random sampling from populations in which the hypothesis is true is 0.000000.

Since the probability of obtaining the values in the full model from the hypothesized population delineated by intelligence and sex is less that the criterion value .05, the hypothesis was rejected.

Ranked means and standard error of means were grouped by intelligence and sex (Table 15.). The following mean differences were calculated: Male Low minus Female Low equals -.0.5; Male Middle minus Female Middle equals -.0.2; Male High minus Female High equals -2.193. The F-test significance is attributed to the mean differences of the Male Low minus Female Low vs. Male Middle minus Female Middle, and the Male Low minus Female Low vs. Male High minus Female High.

TABLE 15

RANKED MEANS AND STANDARD ERROR OF MEANS GROUPED BY INTELLIGENCE AND SEX

	Means	Standard Error
Male Low	3.652	.595
Female Low	3.667	.522
Male Middle	5.421	.792
Female Middle	5.433	.592
Male High	7.850	.941
Female High	10.043	.524

The next interaction analysis considered the following hypothesis: There is no statistically significant interaction effect at the .05 level between race and sex. Table 15 presents the mean scores grouped by race and sex.

TABLE 16

MEAN SCORES GROUPED BY RACE AND SEX
ON ADAPTED BERKO MORPHOLOGY TEST

	Negro	White
Male	4.512	7.895
Female	3.958	8.971

The regression program produced the following F-test values:

DF1 = 3 DF2 = 141

F = 21.15

The probability of obtaining the values in the full model by random sampling from populations in which the hypothesis is true is 0.000000.

Since the probability of obtaining the values in the full model from the hypothesized population delineated by race and sex is less than the criterion value .05, the hypothesis was rejected.

Ranked means and standard error of means were grouped by race and sex (Table 17). The following mean differences were calculated: Negro Male minus White Male equals -3.383; Negro Female minus White Female equals -1.743. The F-test significance is attributed to

the mean differences of Negro Male minus White Male vs. Negro Female minus White Female.

TABLE 17

RANKED MEANS AND STANDARD ERROR OF MEANS
GROUPED BY RACE AND SEX

	Means	Standard Error
Negro Female	3.958	.512
Negro Male	4.512	.412
White Male	7.895	.930
White Female	8.971	.532

The final hypothesis considered was a three-way interaction: There is no statistically significant interaction effect at the .05 level among intelligence, race, and sex. Table 18 presents the mean scores grouped by intelligence, race, and sex.

TABLE 18

MEAN SCORES GROUPED BY INTELLIGENCE, RACE, AND SEX
ON ADAPTED BERKO MORPHOLOGY TEST

		Low	Middle	High
Negro	Male	3.545	3.889	6.750
	Female	3.360	4.190	9.000*
White	Male	6.000**	6.800	9.500
	Female	5.200	8.333	10.143

The regression program produced the following F-test values:

DF1 = 11 DF2 = 133

F = 9.592

The probability of obtaining the values in the full model by random sampling from populations in which the hypothesis is true is 0.000000.

Since the probability of obtaining the values in the full model from the hypothesized population delineated by intelligence, race, and sex is less than the criterion value .05, the hypothesis was rejected.

Ranked means and standard error of means were grouped by intelligence, race, and sex (Table 19). The following mean differences were calculated: Negro Male Low minus White Male Low

*Sample size of two.
**Sample size of one.

equals -2.455; Negro Female Low minus White Female Low equals -2.911; Negro Male Middle minus White Male Middle equals -2.930; Negro Female Middle minus White Female Middle equals -1.840; Negro Male High minus White Male High equals -4.143; Negro Female High minus White Female High equals -1.143. The F-test significance is attributed to the mean difference of Negro Female Middle minus White Female Middle vs. Negro Male High minus White Male High, and Negro Female Middle minus White Female Middle vs. Negro Female High minus White Female High.

TABLE 19

RANKED MEANS AND STANDARD ERROR OF MEANS GROUPED BY INTELLIGENCE, RACE, AND SEX

	Means	Standard Error
Negro Female Low	3.360	.556
Negro Male Low	3.545	.613
Negro Male Middle	3.889	.964
Negro Female Middle	4.190	.555
White Female Low	5.200	1.356
White Male Low	6.000	0 (sample of one)
Negro Male High	6.750	1.060
White Male Middle	6.800	1.093
White Female Middle	8.333	.972
Negro Female High	9.000	2.000 (sample of two)
White Male High	9.500	1.647
White Female High	10.143	.553

Summary

The mean scores on the adapted Berko Morphology Test were subjected to a series of analyses. Significant differences were found that were attributed to the variables of intelligence and of race. No significant difference was found that could be attributed to the variable of sex alone. In analyzing interaction effects, significant differences were found between and among all variables--intelligence, race, and sex.

2

3. Content Analysis of Responses on Adapted Berko Morphology Test

The Berko Morphology Test as adapted measured four morphological formations--formation of the plural noun, of the past verb tense, of the third person singular present verb tense, and of the possessive case, singular and plural. A logical (nonstatistical) content analysis was performed to test the general hypothesis which was stated as follows: No Nonstandard morphological patterns are found in the speech of lower class rural kindergarten students in Alachua County, Florida, as determined by content analysis of responses to the Berko Morphology Test (adapted).

As demonstrated in the sections which follow here, the hypothesis is not rejected in regard to formation of plural nouns and possessive case. In regard to formation of the past and present tenses, a Nonstandard morphological pattern of response was found, indicating rejection of the hypothesis for those formations.

The content analysis revealed also another important feature of the respondents' language: most children who did not give a Standard Response gave as a Nonstandard Response the uninflected form of the word in question--that is, they added no ending to the word stem (one "wug," two "wug," etc.). In addition, in 35 of 38 item tabulations for both sexes, Negro children used uninflected forms more frequently than did white children.

Uninflected language can be said to constitute a pattern, but for purposes of testing the hypothesis (GH4) the uninflected responses were not interpreted as constituting a morphological pattern. In one narrow sense morphology, by definition, requires

inflection. The absence of inflection can be viewed in two ways: it characterizes the earliest speech of children, and it may characterize some regional, social, or ethnic speech dialects. The implications of the uninflected responses of children in this study will be discussed in Chapter V.

The Method of Content Analysis

Four tabulations, arranged by race and sex, were prepared for each of the 19 test items (see Appendix B) and grouped according to the morphological formation which each item measures. Regular English orthography, rather than phonemic transcription, records the tabulated responses. The scheme employed in the content analysis shows how many subjects by percent gave the Standard Response, No Response, or one of three kinds of Nonstandard Response. A Convergent Nonstandard Response indicates a response related to the Standard by similarity of sound, as "lund" is related to "lun." A Divergent Nonstandard Response indicates a word or phrase unrelated to the Standard by similarity of sound and frequently consisting of an original description of the picture shown to the subject. For example, one subject, instead of giving the plural Standard "wugs," responded with the word "twins," apparently evoked by the examiner's statement that "there are two of them." A third kind of Nonstandard Response was labeled Unintelligible Response: the subject answered but his verbalization was neither similar in sound to the Standard nor distinguishable as a divergent unit of meaning.

Plural Noun Formation

Six test items (1, 4, 6, 7, 9, 12) measured noun plural formation. Of these, three (1, 6, 12) are in the category requiring, in linguistic symbols, the allomorph /-z/ and three items (4, 7, 9) are in the category requiring /-əz/.

Far more subjects were successful in pluralizing nouns in the first category than in the second. "Wugs" was correctly given by 73.7% white males, 74.3% white females, 44.2% Negro males, and 41.7% Negro females. "Luns" was correctly given by 63.2% white males, 60.0% white females, 34.9% Negro males, and 20.8% Negro females. "Tigs" was correctly given by 84.1% white males, 88.6% white females, 60.5% Negro males, and 45.8% Negro females.

The more difficult formation required by "kaz," "niz," and "tass," which already have a plural "sound" to them, was performed with less frequent success by subjects. "Kazzes" was correctly given by 5.3% white males, 22.9% white females, 11.6% Negro males, and 4.2% Negro females. "Nizzes" was given correctly by 10.5% white males, 22.9% white females, 23.3% Negro males, and 16.7% Negro females. "Tasses" was given by 5.3% white males, 11.4% white females, 4.7% Negro males, and 2.1% Negro females.

Analysis of Nonstandard Responses to noun plural formation items shows that the prevailing Nonstandard Response is one that might be expected of young children--the uninflected word form, the singular noun given in response to an item requiring the plural. On the difficult plural items (4, 7, 9) subjects used the singular uninflected form more frequently than the plural Standard. On the

easier plural items (1, 6, 12) the singular appears twice as frequently as any other Nonstandard response.

Past Tense Verb Formation

Six test items (3, 5, 8, 10, 13, 15) measured formation of the past tense. Although questions were designed to elicit primarily the simple past tense, the progressive mode of the past tense was also considered a Standard reply. For example, Item 3 says: "Here is a man who knows how to spow. He is spowing. He did the same thing yesterday. What did he do yesterday? Yesterday he _____." Both "spowed" and "was spowing" are Standard Responses, and the tabulations show frequencies for each.

The nuances of verb tense formation might require adults to answer "spowed," unless they had been asked "what was he doing yesterday," in which case the progressive form would be appropriate, but such nuances cannot be expected to be understood by kindergarten children.

While Standard Responses for noun plurals ranged as high as 88.6%, the highest Standard verb response was 57.9% for white children and 37.2% for Negro children, indicative of the greater complexity of Standard verb morphology for subjects in this study.

Two items (8, 10) are in the language category requiring, in linguistic symbols, the allomorph /-əd/, and four are in the category requiring /-d/, after stems ending in voiced sounds. As in the noun plurals, one of these categories requires the addition of a full syllable--"bod" becomes "bodded"--apparently a more difficult operation than adding a single sound, as in forming "spowed" from "spow." Results on Items 8 and 10, "motted" and "bodded," reflect

the difficulty. On these items, highest Standard Response giving the simple past tense was 10.5% white males. On these items, as on none of the other four past tense items, the progressive past mode "was bodding," "was motting," in three tabulation charts appeared with greater frequency than did the simple past. Fourteen and three-tenths percent white females, for example, responded "was bodding," while 2.9% responded "bodded." Eleven and four-tenths percent white females responded "was motting," while 2.9% responded "motted."

Analysis of Nonstandard Responses to items measuring past tense verb formation reveals three commonly recurring forms, well illustrated in Item 5 tabulations, which include all three forms for each group--white males, white females, Negro males, and Negro females. These three forms for Item 5 are "rick," "ricking," and "ricken," given in response to the question: "Here is a man who knows how to rick. He is ricking. He did the same thing yesterday. What did he do yesterday? Yesterday he _____." "Rick" is the uninflected verb, "ricking" is the present participle, and "ricken" probably represents a variation of "ricking."[1]

These three forms, and variations of them, occur as follows: out of four tabulations for each test item, or a total of 24 for the six items, the uninflected verb form occurs in all 24 tabulations, the present participle occurs in 23, and the "en" form occurs in 16. As might be expected, the child who has not mastered verb morphology

[1]The loss or omission of the last letter, syllable, or part of a word is known in linguistics as "apocope."

tends most often to use the simplest, uninflected form of the word in question. An average of 31.2% of respondents, per group, for each item, used the uninflected verb.

Unexpected, however, was the frequency with which the present participle, without auxiliary, occurred in response to the six past tense items. An average of 12.1% white children and 4.2% Negro children in each group except one on each past tense item used the participle form.[1]

In trying to account for the unexpected participle usage one might suggest that the test question posed by the examiner contained a present participle which the children mimicked. If so, they did not mimic also the present auxiliary included in the question, as they might logically have been expected to do. And in three other test items--those which measured present tense verb formation--the present participle without auxiliary appears in only 6 of the 12 tabulations for those items, despite its inclusion with auxiliary in the examiner's question. For past tense formation the present participle without auxiliary appears in 96% of the tabulations, while in present tense formation it appears in 50% of the tabulations. However, when it does occur for either formation, it is given by an average of 7.4% of respondents.

Although of undetermined origin, the participle usage occurs with sufficient frequency to constitute a Nonstandard morphological pattern, more prevalent among white subjects than among Negro subjects.

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[1]Apocopated forms were not included in this computation.

Third Person Singular Present Tense Verb Formation

Three items (11, 14, 20) measured formation of the third person singular present verb tense. Here again either the simple present or the progressive mode of the present tense must be considered a Standard Response, and tabulations show the occurrence of each. The allomorphs required by the items to form the Standard simple present tense are identical with those required in the noun plural items: /-z/, /-əz/.

As in noun plural formations, subjects gave the Standard Response more frequently to an item which did not require the addition of an extra syllable. "Tulls," formed from "tull," was given correctly by 57.9% white males, 57.1% white females, 37.2% Negro males, and 35.4% Negro females. On the other hand, "nazzes," formed from "naz," was given correctly by 10.5% white males, 25.7% white females, 7% Negro males, and 12.5% Negro females. "Loodges," formed from "loodge," was given by 26.3% white males, 31.4% white females, 4.7% Negro males, and 6.2% Negro females.

As was the case for all other formations which the test measured, the prevailing Nonstandard Response for the present tense was the uninflected form of the verb--"naz," "loodge," and "tull." The present participle appeared in 6 of 12 tabulations, occurring with less overall frequency than it did in past tense formations but still given, when it appears, by an average of 11% of white respondents in a group and 2.3% Negro respondents.

In both the present and past tense verb formations the occurrence of the present participle as a response was deemed to be of sufficient frequency to constitute a Nonstandard morphological pattern.

Possessive Case Formation

Four items measured formation of the possessive case, singular (16, 18) and plural (17, 19). These items appeared in consecutive order in the test and in order of decreasing difficulty. Accordingly, the responses of each group show increase in Standard Responses from one item to the next.

Once again the prevailing Nonstandard Response was the uninflected noun, which in 7 of the 12 group tabulations occurred more often than did the Standard Response. In addition, for the possessive case items there is a noticeable increase in the frequency of Divergent Nonstandard Response, especially among the females. Although not frequent enough to constitute a pattern, certain responses of Negro females--namely, "his'n," "dere," "dem," and "they own's"--seem to relate to a Nonstandard morphology which is cultural and ethnic in origin.

Summary

The following hypothesis was tested by a nonstatistical operation: No Nonstandard morphological patterns are found in the speech of lower class rural kindergarten students in Alachua County, Florida, as determined by content analysis of responses to the Berko Morphology Test (adapted).

In regard to formation of the plural noun and formation of the possessive case, the hypothesis is not rejected. In regard to formation of the past verb tense and the third singular present verb tense, an average of 7.4% of the respondents in 29 of 36 group tabulations, by race and sex, gave the present participle without auxiliary as their answer to the test question. This frequency

of the use of the present participle without auxiliary is deemed to constitute a Nonstandard morphological pattern which causes rejection of the hypothesis in these formations.

Of three kinds of Nonstandard Response tabulated--Convergent, Divergent, and Unintelligible--a Convergent Response consisting of the uninflected word in question prevailed, appearing with greater frequency than any other Nonstandard Response and often with greater frequency than the Standard Response. In addition, in 35 of 38 item tabulations for both sexes, Negro children used uninflected forms more frequently than did white children.

The absence of inflection can be viewed developmentally as characterizing the early speech of children or dialectally as characterizing the speech of some adult dialect groups. For purposes of testing the hypothesis, uninflected responses in this study were not interpreted as constituting a morphological pattern in the strict sense. Implications of their use by children in this study, and especially of their more frequent use by black children than by white children, will be examined in Chapter V.

The content analysis supported findings of Berko and others that children have greater difficulty with verb tense formations[1] than with noun formations. The analysis revealed also that on 16 of the 19 test items, frequency of No Response was greater for Negro children than for white children, especially on verb tense items.

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[1]The child's understanding of verb tenses, present, past, and future, is described by Peter Herriot, "The Comprehension of Tense by Young Children," Child Development, 40 (March, 1969), pp. 103-110.

V. SUMMARY, RESULTS, IMPLICATIONS AND SUGGESTIONS FOR FURTHER RESEARCH

Summary

This language study investigated morphological proficiency in relation to intelligence, race, and sex in a lower class rural kindergarten population in Alachua County, Florida. The study was based on subculture language research needs outlined by the 1962 Project English Research Conference and the 1964 Bloomington Linguistic Conference on Urban School Dialects and Language Learning. The immediate purpose of the study was to provide knowledge about the language, specifically morphology, used by lower class rural kindergarten students in one north central Florida county where no previous dialect studies have been made.

Three approaches to the problem were employed. First, the adapted Berko Morphology Test, the only instrument of its kind readily available for testing morphological proficiency, was evaluated by item analysis and factor analysis. Second, a multiple linear regression analysis was used to determine the relationship among morphological proficiency and intelligence, race, and sex in the population. Third, a content analysis of responses to the Berko Test was used to examine morphological characteristics revealed by this study.

The kindergarten children in this study were students in five Alachua County rural public elementary schools in October, 1969.

From a total rural kindergarten population of 370 children, 173 subjects were designated by participating teachers as being lower class according to any two of the following three criteria: ESEA Title I family income stipulations, family on welfare, or children enrolled in the Free Lunch Program. No participating student was younger than five or older than seven.

Between mid-October and mid-December, 1969, the Kuhlmann-Anderson Intelligence Test, Seventh Edition, Booklet K, shortened as required by the subjects in this study, was administered, followed by arrangement of raw scores into three intelligence-level groupings.

Between mid-December, 1969, and February 1, 1970, 145 available subjects, constituting the final population, were individually administered the adapted Berko Morphology Test. Responses were both taped and transcribed in writing, then scored as Standard ("right"), Nonstandard ("wrong"), or No Response. For later analysis, Nonstandard Responses were divided into three categories: Convergent, Divergent, or Unintelligible.

Records compiled for all subjects included name, age, sex, race, identification number, intelligence score, morphology score, and morphology item details.

Results

Item analysis of the adapted Berko Morphology Test resulted in rejection of one test item (2) which proved to be too difficult and failed to discriminate satisfactorily.

Factor analysis of the instrument revealed that no particular factor emerged. The absence of emergent factors may be due in part

to an unequal distribution of the dichotomous data and in part, perhaps, due to the fact that the instrument was used across race, in the light of racial language differences described in the literature.[1]

From the data, means and mean differences were calculated within and between groups according to intelligence, race, and sex. These data were then submitted to analysis of variance and the resulting F's were checked at the .05 level of significance. The statistical analysis resulted in rejection of the following two main effects hypotheses:

(H1) There are no statistically significant differences among the means of the scores on the Berko Morphology Test at the .05 level of confidence for the three intelligence-level groupings.

(H2) There is no statistically significant difference between the means of the scores on the Berko Morphology Test at the .05 level of confidence for the two races.

The analysis did not reject the following main effects hypothesis:

(H3) There is no statistically significant difference between the means of the scores on the Berko Morphology Test at the .05 level of confidence for the two sexes.

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[1]See Chapter II.

In analysis of interaction effects, the results rejected at the .05 level of confidence the four hypotheses (H4, H5, H6, H7) concerning intelligence and race, intelligence and sex, race and sex, and the three-way interaction among intelligence, race, and sex.

A nonstatistical content analysis of responses to the adapted Berko Morphology Test did not reject in regard to noun plural and possessive case formations the hypothesis that there would be no Nonstandard patterns of morphology revealed by the test. However, in past tense and third singular present tense verb formations, the content analysis rejected the hypothesis. An average of 7.4 percent of respondents in 29 of 36 group tabulations gave the present participle, without auxiliary, in response to items measuring verb formation. This form was given by students of both races but more frequently by white students than by Negroes.

The content analysis supported findings by Berko and others that noun formations are easier for children than are verb formations. It indicated also that for 16 of 19 test items, Negro children had a higher No Response frequency than did white children.

The content analysis revealed that the prevailing Nonstandard Response given was the uninflected form of the word in question. In 43 of 76 group tabulations, uninflected Nonstandard Responses were given more frequently than Standard Responses. Furthermore, Negro students used the uninflected language more frequently than did white students. In 35 of 38 group tabulations, the percentage of Negro students using the uninflected word form in their response was higher than the percentage of white students using that form.

Implications and Suggestions for Further Research

It appears both possible and valuable to measure the psycholinguistic abilities of young children by testing. Instruments for this purpose, however, are few in number and are still being refined.[1] The need for additional instruments and further refinement is evident, particularly for measuring discrete, finite language operations like morphology, as distinct from the infinite language operation of sentence-production.

On the other hand, language testing will never provide us with all we want to know about children's language. The implications of test results cannot be fully understood without reference to descriptive linguistic dialect studies. Results of the present research study, for example, showed a relationship between race and morphological proficiency in a population controlled for socio-economic level (lower class), geographic distribution (rural), and age-grade level (kindergarten). Content analysis revealed that Negro subjects used uninflected word forms with much greater frequency than did white subjects. One implication of these results is that when morphology is viewed developmentally, Negro subject participants in this study are underdeveloped, in comparison with white subjects, in one vital language area. However, there may well be nondevelopmental aspects of the morphology of rural southern Negro speech which account, in part at least, for these findings.

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[1]See, for example, Milton Wisland and Wesley A. Many, "A Factorial Study of the Illinois Test of Psycholinguistic Abilities with Children Having Above Average Intelligence," Educational and Psychological Measurement 29 (1969), 367-376.

Recent social dialect studies referred to in Chapter II point to major dialect differences that characterize Negro speech as fully developed, systematic, fully functioning, but in many respects different from Standard English. In the absence of linguistic studies of Negro-white rural Florida dialects, it is not possible to interpret fully the significance of the test performance by children of both races. This study suggests the need for descriptive dialect studies of adult speech in the rural south.

The study supports the generally accepted belief in a relationship between intelligence and language ability. One implication is that early group intelligence testing might provide information important along with other data in detecting and diagnosing language learning difficulties. In the county in which this study was carried out, no intelligence tests are given until the end of the third grade, a time when most language skills are expected to have been mastered. Yet group intelligence tests are available for younger children, and even when modified, as shortened in this study, they may show a wide score distribution and a significant relationship with other measures.

Refined group intelligence instruments are needed for use with lower class rural children. Such tests need to be geographically fair as well as culturally fair. For example, test items pertaining to cold weather accessories (mittens, sleds) may render a southern test participant geographically disadvantaged rather than culturally disadvantaged. Instruments need to be designed based on knowledge of the life styles of rural southern children.

Results of this study support the findings of Templin, Berko, and Edmonds that there is no significant difference in the language performance of boys and girls in the abilities assessed, indicating that sex alone is not a valid predictor of language proficiency. But in view of earlier findings which suggested the superiority of girls to boys in language development, additional contemporary language research is needed to establish more precisely the present role of the sex variable in language usage and development.

APPENDIX A

THE BERKO MORPHOLOGY TEST
(ADAPTED)

1. Plural. One bird-like animal, then two. "This is a wug. Now there is another one. There are two of them. There are two _____."

2. Plural. One bird, then two. "This is a gutch. Now there is another one. There are two of them. There are two _____."

3. Past tense. Man with a steaming pitcher on his head. "This is a man who knows how to spow. He is spowing. He did the same thing yesterday. What did he do yesterday? Yesterday he _____."

4. Plural. One animal, then two. "This is a kaz. Now there is another one. There are two of them. There are two _____."

5. Past tense. Man swinging an object. "This is a man who knows how to rick. He is ricking. He did the same thing yesterday. What did he do yesterday? Yesterday he _____."

6. Plural. One flower, then two. "This is a lun. Now there is another one. There are two of them. There are two _____."

7. Plural. One animal, then two. "This is a niz. Now there is another one. There are two of them. There are two _____."

8. Past tense. Man doing calisthenics. "This is a man who knows how to mot. He is motting. He did the same thing yesterday. What did he do yesterday? Yesterday he _____."

9. Plural. One animal, then two. "This is a tass. Now there is another one. There are two of them. There are two _____."

10. Past tense. Man dangling an object on a string. "This is a man who knows how to bod. He is bodding. He did the same thing yesterday. What did he do yesterday? Yesterday he _____."

11. Third person singular, present tense. Man shaking an object. "This is a man who knows how to naz. He is nazzing. He does it every day. Every day he _____."

*12. Plural. One object, then another. "This is a tig. Now there is another one. There are two of them. There are two _____."

13. Past tense. Man exercising. "This is a man who knows how to gling. He is glinging. He did the same thing yesterday. What did he do yesterday? Yesterday he _____."

14. Third person singular, present tense. Man holding an object. "This is a man who knows how to loodge. He is loodging. He does it every day. Every day he _____."

15. Past tense. Man standing on the ceiling. "This is a man who knows how to bing. He is binging. He did the same thing yesterday. What did he do yesterday? Yesterday he _____."

_____

*Adaptation.

16. & 17. Singular and plural possessive. One animal wearing a hat, then two wearing hats. "This is a niz who owns a hat. Whose hat is it? It is the _____ hat. Now there are two nizzes. They both own hats. Whose hats are they? They are the _____ hats."

18. & 19. Singular and plural possessive. One animal wearing a hat, then two. "This is a wug who owns a hat. Whose hat is it? It is the _____ hat. Now there are two wugs. They both own hats. Whose hats are they? They are the _____ hats."

*20. Third person singular, present tense. Man throwing an object. "This is a man who knows how to tull. He is tulling. He does it every day. Every day he _____."

*Adaptation.

APPENDIX B

CONTENT ANALYSIS OF RESPONSES ON
ADAPTED BERKO MORPHOLOGY TEST

Plural Noun Formation

Item 1:

"This is a wug. Now there is another one. There are two of them. There are two _____."

STANDARD RESPONSE: wugs

SUBJECTS	PERCENT STANDARD	PERCENT NO R	NONSTANDARD PERCENT CONVERGENT		NONSTANDARD PERCENT DIVERGENT		PERCENT U R
white males N=19	73.7		wug	26.3			
TOTAL PERCENT N=19	73.7			26.3			
white females N=35	74.3		wug	20.0	twins	2.9	2.9
TOTAL PERCENT N=35	74.3			20.0		2.9	2.9

CONTENT ANALYSIS OF RESPONSES ON
ADAPTED BERKO MORPHOLOGY TEST

Plural Noun Formation

Item 1:

"This is a wug. Now there is another one. There are two of them. There are two _____."

STANDARD RESPONSE: wugs

SUBJECTS	PERCENT STANDARD	PERCENT NO R	NONSTANDARD PERCENT CONVERGENT		NONSTANDARD PERCENT DIVERGENT		PERCENT U R
Negro males N=43	44.2	2.3	wug	46.5			7.0
TOTAL PERCENT N=43	44.2	2.3		46.5			7.0
Negro females N=48	41.7	6.2	wug wu... wah	45.8 2.1 2.1	birds	2.1	
TOTAL PERCENT N=48	41.7	6.2		50.0		2.1	

CONTENT ANALYSIS OF RESPONSES ON ADAPTED
BERKO MORPHOLOGY TEST

Plural Noun Formation

Item 4:

"This is a kaz. Now there is another one. There are two of them. There are two _____."

STANDARD RESPONSE: kazzes

SUBJECTS	PERCENT STANDARD	PERCENT NO R	NONSTANDARD PERCENT CONVERGENT		NONSTANDARD PERCENT DIVERGENT	NONSTANDARD PERCENT U R
white males N = 19	5.3	5.3	kaz gadge gads kats	73.7 5.3 5.3 5.3		
TOTAL PERCENT N = 19	5.3	5.3		89.6		
white females N = 35	22.9		kaz kats kass	71.4 2.9 2.9		
TOTAL PERCENT N = 35	22.9			77.2		

CONTENT ANALYSIS OF RESPONSES ON ADAPTED
BERKO MORPHOLOGY TEST

Plural Noun Formation

Item 4:

"This is a kaz. Now there is another one. There are two of them. There are two _____."

STANDARD RESPONSE: kazzes

SUBJECTS	PERCENT STANDARD	PERCENT NO R	NONSTANDARD PERCENT CONVERGENT		NONSTANDARD PERCENT DIVERGENT	NONSTANDARD PERCENT U R
Negro males N = 43	11.6	2.3	ka... kap kaz	7.0 2.3 76.7		
TOTAL PERCENT N = 43	11.6	2.3		86.0		
Negro females N = 48	4.2	4.2	kaz ka...	72.9 14.6		4.2
TOTAL PERCENT N = 48	4.2	4.2		87.5		4.2

CONTENT ANALYSIS OF RESPONSES ON ADAPTED
BERKO MORPHOLOGY TEST

Plural Noun Formation

Item 6:

"This is a lun. Now there is another one. There are two of them. There are two _____."

STANDARD RESPONSE: luns

SUBJECTS	PERCENT STANDARD	PERCENT NO R	NONSTANDARD PERCENT CONVERGENT	NONSTANDARD PERCENT DIVERGENT	NONSTANDARD PERCENT U R
white males N = 19	63.2	5.3	lun 26.3 lunrah 5.3		
TOTAL PERCENT N = 19	63.2	5.3	31.6		
white females N = 35	60.0	2.9	lun 31.4 lund 2.9 lundo 2.9		
TOTAL PERCENT N = 35	60.0	2.9	37.2		

CONTENT ANALYSIS OF RESPONSES ON ADAPTED
BERKO MORPHOLOGY TEST

Plural Noun Formation

Item 6:

"This is a lun. Now there is another one. There are two of them. There are two _____."

STANDARD RESPONSE: luns

SUBJECTS	PERCENT STANDARD	PER-CENT NO R	NONSTANDARD PERCENT CONVERGENT		NONSTANDARD PERCENT DIVERGENT		NONSTANDARD PER-CENT U R
Negro males N = 43	34.9		lun lund lung lundus lundo	51.2 7.0 2.3 2.3 2.3			
TOTAL PERCENT N = 43	34.9			65.1			
Negro females N = 48	20.8	6.2	lun lunuh lunya lundus lunge lund lundo	39.6 2.1 2.1 4.2 2.1 4.2 2.1	wug	2.1	14.6
TOTAL PERCENT N = 48	20.8	6.2		56.4		2.1	14.6

CONTENT ANALYSIS OF RESPONSES ON ADAPTED
BERKO MORPHOLOGY TEST

Plural Noun Formation

Item 7:

"This is a niz.. Now there is another one. There are two of them. There are two _____."

STANDARD RESPONSE: nizzes

SUBJECTS	PERCENT STANDARD	PER-CENT NO R	NONSTANDARD PERCENT CONVERGENT		NONSTANDARD PERCENT DIVERGENT	NONSTANDARD PER-CENT U R
white males N = 19	10.5	5.3	niz nig nids nigs	68.4 5.3 5.3 5.3		
TOTAL PERCENT N = 19	10.5	5.3		84.3		
white females N = 35	22.9	2.9	niz nits	65.7 5.7		2.9
TOTAL PERCENT N = 35	22.9	2.9		71.4		2.9

CONTENT ANALYSIS OF RESPONSES ON ADAPTED
BERKO MORPHOLOGY TEST

Plural Noun Formation

Item 7:

"This is a niz. Now there is another one. There are two of them. There are two _____."

STANDARD RESPONSE: nizzes

SUBJECTS	PERCENT STANDARD	PER-CENT NO R	NONSTANDARD PERCENT CONVERGENT		NONSTANDARD PERCENT DIVERGENT		PER-CENT U R
Negro males N = 43	23.3		niz noozes ni... nids	65.1 2.3 2.3 4.6			2.3
TOTAL PERCENT N = 43	23.3			74.3			2.3
Negro females N = 48	16.7	6.2	niz ni...	64.6 2.1	dogs wug	2.1 2.1	6.2
TOTAL PERCENT N = 48	16.7	6.2		66.7		4.2	6.2

CONTENT ANALYSIS OF RESPONSES ON ADAPTED
BERKO MORPHOLOGY TEST

Plural Noun Formation

Item 9:

"This is a tass. Now there is another one. There are two of them. There are two _____."

STANDARD RESPONSE: tasses

SUBJECTS	PERCENT STANDARD	PERCENT NO R	NONSTANDARD PERCENT CONVERGENT		NONSTANDARD PERCENT DIVERGENT		NONSTANDARD PERCENT U R
white males N = 19	5.3		tass tads taz tap	63.2 10.5 10.5 5.3	cat	5.3	
TOTAL PERCENT N = 19	5.3			89.5		5.3	
white females N = 35	11.4		tass ta... tad taz tacks nass	71.4 2.9 2.9 2.9 2.9 2.9			2.9
TOTAL PERCENT N = 35	11.4			85.9			2.9

CONTENT ANALYSIS OF RESPONSES ON ADAPTED
BERKO MORPHOLOGY TEST

Plural Noun Formation

Item 9:

"There is a tass. Now there is another one. There are two of them. There are two _____."

STANDARD RESPONSE: tasses

SUBJECTS	PERCENT STANDARD	PER-CENT NO R	NONSTANDARD PERCENT CONVERGENT		NONSTANDARD PERCENT DIVERGENT		PER-CENT U R
Negro males N = 43	4.7	4.7	tass tad ta... tap taff tath	67.4 2.3 7.0 2.3 2.3 2.3	dogs	2.3	4.7
TOTAL PERCENT N = 43	4.7	4.7		83.6		2.3	4.7
Negro females N = 48	2.1		tass taz ta... caff tack	75.0 4.2 8.3 2.1 2.1	mots	2.1	4.2
TOTAL PERCENT N = 48	2.1			91.7		2.1	4.2

CONTENT ANALYSIS OF RESPONSES ON ADAPTED
BERKO MORPHOLOGY TEST

Plural Noun Formation

Item 12:

"This is a tig. Now there is another one. There are two of them. There are two _____."

STANDARD RESPONSE: tigs

SUBJECTS	PERCENT STANDARD	PER-CENT NO R	NONSTANDARD PERCENT CONVERGENT		NONSTANDARD PERCENT DIVERGENT	NONSTANDARD PER-CENT U R
white males N = 19	84.1		tig mig	10.5 5.3		
TOTAL PERCENT N = 19	84.1			15.8		
white females N = 35	88.6		tig	8.6		2.9
TOTAL PERCENT N = 35	88.6			8.6		2.9

CONTENT ANALYSIS OF RESPONSES ON ADAPTED
BERKO MORPHOLOGY TEST

Plural Noun Formation

Item 12:

"This is a tig. Now there is another one. There are two of them. There are two _____."

STANDARD RESPONSE: tigs

SUBJECTS	PERCENT STANDARD	PER-CENT NO R	NONSTANDARD PERCENT CONVERGENT		NONSTANDARD PERCENT DIVERGENT	NONSTANDARD PER-CENT U R
Negro males N = 43	60.5		tig dig tid	30.2 2.3 2.3		4.7
TOTAL PERCENT N = 43	60.5			34.8		4.7
Negro females N = 48	45.8	2.1	tig ti... nig dig tag tigger	29.1 4.2 4.2 2.1 2.1 2.1	down there 2.1	6.2
TOTAL PERCENT N = 48	45.8	2.1		43.8	2.1	6.2

CONTENT ANALYSIS OF RESPONSES ON ADAPTED
BERKO MORPHOLOGY TEST

Past Tense Verb Formation

Item 3:

"This is a man who knows how to spow. He is spowing. He did the same thing yesterday. What did he do yesterday? Yesterday he _____."

STANDARD RESPONSE: spowed or was spowing

SUBJECTS	PERCENT STANDARD	PER-CENT NO R	NONSTANDARD PERCENT CONVERGENT	NONSTANDARD PERCENT DIVERGENT	NONSTANDARD PER-CENT U R
white males N = 19	spowed 47.4 was spowing 15.8	15.8	spowing 15.8 spow 5.3		
TOTAL PERCENT N = 19	63.2	15.8	21.1		
white females N = 35	spowed 42.9	20.0	spowing 20.0 spow 11.4 is spowing 2.9		2.9
TOTAL PERCENT N = 35	42.9	20.0	34.3		2.9

CONTENT ANALYSIS OF RESPONSES ON ADAPTED
BERKO MORPHOLOGY TEST

Past Tense Verb Formation

Item 3:

"This is a man who knows how to spow. He is spowing. He did the same thing yesterday. What did he do yesterday? Yesterday he _____."

STANDARD RESPONSE: spowed or was spowing

SUBJECTS	PERCENT STANDARD	PER-CENT NO R	NONSTANDARD PERCENT CONVERGENT	NONSTANDARD PERCENT DIVERGENT	NONSTANDARD PER-CENT U R
Negro males N = 43	spowed 32.6 was spowing 2.3	21.0	spawed 4.7 spowing 11.6 spud 2.3 spaw 11.6 smow 2.3 spow 4.7 scub 2.3	play 2.3	2.3
TOTAL PERCENT N = 43	34.9	21.0	39.5	2.3	2.3
Negro females N = 48	spowed 27.1	18.7	spug 2.1 spowing 6.2 mow 2.1 spaw 8.3 spawed 2.1 spudge 4.2 spoodge 2.1 spow 14.6 smow 22.1	did the same thing 2.1	8.3
TOTAL PERCENT N = 48	27.1	18.7	43.8	2.1	8.3

CONTENT ANALYSIS OF RESPONSES ON ADAPTED
BERKO MORPHOLOGY TEST

Past Tense Verb Formation

Item 5:

"This is a man who knows how to rick. He is ricking. He did the same thing yesterday. What did he do yesterday? Yesterday he _____."

STANDARD RESPONSE: ricked or was ricking

SUBJECTS	PERCENT STANDARD	PER-CENT NO R	NONSTANDARD PERCENT CONVERGENT	NONSTANDARD PERCENT DIVERGENT	PER-CENT U R
white males N = 19	ricked 31.6 was ricking 5.3		rick 31.6 raked 5.3 ricking 10.5 ricken 5.3	walk 5.3 hit the ball 5.3	
TOTAL PERCENT N = 19	36.9		52.7	10.6	
white females N = 35	ricked 28.6 was ricking 5.7	5.7	rick 25.7 ricken 8.6 ricking 17.1 racken 2.9 ricken-ded 2.9 is ricking 2.9		
TOTAL PERCENT N = 35	34.3	5.7	60.1		

CONTENT ANALYSIS OF RESPONSES ON ADAPTED
BERKO MORPHOLOGY TEST

Past Tense Verb Formation

Item 5:

"This is a man who knows how to rick. He is ricking. He did the same thing yesterday. What did he do yesterday? Yesterday he _____."

STANDARD RESPONSE: ricked or was ricking

SUBJECTS	PERCENT STANDARD	PER-CENT NO R	NONSTANDARD PERCENT CONVERGENT	NONSTANDARD PERCENT DIVERGENT	NONSTANDARD PER-CENT U R
Negro males N = 43	ricked 16.3 was ricking 2.3	11.6	rick 34.9 ricks 2.3 ricking 4.7 ricken 9.3 ricket 4.7 rake 2.3	had a rake 2.3 hold the stick 2.3 did the same thing 2.3	4.7
TOTAL PERCENT N = 43	18.6	11.6	58.2	6.9	4.7
Negro females N = 48	ricked 18.7	22.9	rick 35.4 ricking 4.2 ricken 4.2 rook 2.1 rak 2.1	had a hand rake 2.1 did the same thing 4.2	4.2
TOTAL PERCENT N = 48	18.7	22.9	48.0	5.3	4.2

CONTENT ANALYSIS OF RESPONSES ON ADAPTED
BERKO MORPHOLOGY TEST

Past Tense Verb Formation

Item 8:

"This is a man who knows how to mot. He is motting. He did the same thing yesterday. What did he do yesterday? Yesterday he _____."

STANDARD RESPONSE: motted or was motting

			NONSTANDARD		
SUBJECTS	PERCENT STANDARD	PER-CENT NO R	PERCENT CONVERGENT	PERCENT DIVERGENT	PER-CENT U R
white males N = 19	motted 5.3 was motting 5.3		mot 26.3 mop 26.3 motten 10.5 mock 5.3 mit 5.3 mopped 5.3 mops 5.3 motting 5.3		
TOTAL PERCENT N = 19	10.6		89.6		
white females N = 35	motted 2.9 was motting 11.4		mot 40.0 mop 5.7 motten 2.9 mopped 5.7 mopping 2.9 mottinged 2.9 motting 20.0	thing 2.9 did the same thing 2.9	
TOTAL PERCENT N = 35	14.3		80.1	5.8	

CONTENT ANALYSIS OF RESPONSES ON ADAPTED
BERKO MORPHOLOGY TEST

Past Tense Verb Formation

Item 8:

"This is a man who knows how to mot. He is motting. He did the same thing yesterday. What did he do yesterday? Yesterday he _____."

STANDARD RESPONSE: motted or was motting

SUBJECTS	PERCENT STANDARD	PER-CENT NO R	NONSTANDARD PERCENT CONVERGENT	NONSTANDARD PERCENT DIVERGENT	NONSTANDARD PER-CENT U R
Negro males N = 43	was motting 2.3	9.3	mot 51.2 motting 2.3 is motting 2.3 mock 2.3 mop 4.7 mopped 2.3 motten 7.0 ma... 2.3 mots 2.3 mut 2.3	hold the stick 2.3 did the same thing 2.3	4.7
TOTAL PERCENT N = 43	2.3	9.3	79.0	4.6	4.7
Negro females N = 48	motted 2.1	14.6	mot 43.7 mop 8.3 mopping 2.1 mock 4.2 mow 2.1 motting 2.1 motten 6.2 mots 2.1 ma... 2.1 muzzed 2.1	did the same thing 6.2	2.1
TOTAL PERCENT N = 48	2.1	14.6	75.0	6.2	2.1

CONTENT ANALYSIS OF RESPONSES ON ADAPTED
BERKO MORPHOLOGY TEST

Past Tense Verb Formation

Item 10:

"This is a man who knows how to bod. He is bodding. He did the same thing yesterday. What did he do yesterday? Yesterday he _____."

STANDARD RESPONSE: bodded or was bodding

SUBJECTS	PERCENT STANDARD	PER-CENT NO R	NONSTANDARD PERCENT CONVERGENT	NONSTANDARD PERCENT DIVERGENT	NONSTANDARD PER-CENT U R
white males N = 19	bodded 10.5 was bodding 5.3		bod 36.8 bob 15.8 bodding 10.5 bop 5.3 bods 10.5		5.3
TOTAL PERCENT N = 19	15.8		78.9		5.3
white females N = 35	bodded 2.9 was bodding 14.3		bod 42.9 bop 2.9 is bodden 2.9 bob 8.6 bodding 17.1 bodden 5.7	down 2.9	
TOTAL PERCENT N = 35	17.2		80.1	2.9	

CONTENT ANALYSIS OF RESPONSES ON ADAPTED
BERKO MORPHOLOGY TEST

Past Tense Verb Formation

Item 10:

"This is a man who knows how to bod. He is bodding. He did the same thing yesterday. What did he do yesterday? Yesterday he _____."

STANDARD RESPONSE: bodded or was bodding

SUBJECTS	PERCENT STANDARD	PER-CENT NO R	NONSTANDARD PERCENT CONVERGENT	NONSTANDARD PERCENT DIVERGENT	NONSTANDARD PER-CENT U R
Negro males N = 43		7.0	bod 58.1 bods 2.3 bodding 7.0 bobbed 2.3 bop 2.3 ba... 9.3 bus 2.3	hold the thing 2.3 did the same thing 4.7	2.3
TOTAL PERCENT N = 43		7.0	83.6	7.0	2.3
Negro females N = 48	bodded 6.2	8.3	bod 41.7 bodden 2.1 bob 6.2 bobbing 2.1 bodding 2.1 bods 2.1 box 2.1 bop 4.2 bogs 2.1 ba... 6.2 baz 2.1	mopped 2.1 did the same thing 4.2	6.2
TOTAL PERCENT N = 48	6.2	8.3	73.0	6.3	6.2

CONTENT ANALYSIS OF RESPONSES ON ADAPTED
BERKO MORPHOLOGY TEST

Past Tense Verb Formation

Item 13:

"This is a man who knows how to gling. He is glinging. He did the same thing yesterday. What did he do yesterday? Yesterday he _____."

STANDARD RESPONSE: glinged or was glinging

SUBJECTS	PERCENT STANDARD	PER-CENT NO R	NONSTANDARD PERCENT CONVERGENT	NONSTANDARD PERCENT DIVERGENT	NONSTANDARD PER-CENT U R
white males N = 19	glinged 57.9		gling 10.5 ging 5.3 glinging 5.3 glingen 5.3 cling 5.3 glanged 5.3	brig 5.3	
TOTAL PERCENT N = 19	57.9		37.0	5.3	
white females N = 35	glinged 48.6 was glinging 5.7		gling 20.0 is glinging 2.9 glinging 8.6 glingded 2.9 sing 2.9	banged 2.9 did the same thing 2.9	2.9
TOTAL PERCENT N = 35	54.3		37.3	5.8	2.9

CONTENT ANALYSIS OF RESPONSES ON ADAPTED
BERKO MORPHOLOGY TEST

Past Tense Verb Formation

Item 13:

"This is a man who knows how to gling. He is glinging. He did the same thing yesterday. What did he do yesterday? Yesterday he _____."

STANDARD RESPONSE: glinged or was glinging

SUBJECTS	PERCENT STANDARD	PER-CENT NO R	NONSTANDARD PERCENT CONVERGENT	NONSTANDARD PERCENT DIVERGENT	NONSTANDARD PER-CENT U R
Negro males N = 43	glinged 14.0 was glinging 2.3	7.0	gling 44.1 glingen 2.3 glinging 2.3 cling 7.0 clings 2.3	did the same thing 2.3 jumped 2.3	14.0
TOTAL PERCENT N = 43	16.3	7.0	58.0	4.6	14.0
Negro females N = 48	glinged 14.6	8.3	gling 35.4 glingen 4.2 glinging 2.1 gli... 2.1 cling 14.6 clinging 2.1 scling 2.1 did cling 2.1	did the same thing 4.2 do the same thing 2.1	6.2
TOTAL PERCENT N = 48	14.6	8.3	64.7	6.3	6.2

CONTENT ANALYSIS OF RESPONSES ON ADAPTED
BERKO MORPHOLOGY TEST

Past Tense Verb Formation

Item 15:

"This is a man who knows how to bing. He is binging. He did the same thing yesterday. What did he do yesterday? Yesterday he _____."

STANDARD RESPONSE: binged or was binging

SUBJECTS	PERCENT STANDARD	PER-CENT NO R	NONSTANDARD PERCENT CONVERGENT	NONSTANDARD PERCENT DIVERGENT	NONSTANDARD PER-CENT U R
white males N = 19	binged 47.4		bing 21.0 binging 21.0 banged 5.3 ding 5.3		
TOTAL PERCENT N = 19	47.4		52.6		
white females N = 35	binged 51.4 was binging 14.3		bing 8.6 banged 2.9 binging 8.6 bingen 2.9 ging 2.9 bing-ed 2.9	do that 2.9 he is upside down 2.9	
TOTAL PERCENT N = 35	65.7		28.8	5.8	

CONTENT ANALYSIS OF RESPONSES ON ADAPTED
BERKO MORPHOLOGY TEST

Past Tense Verb Formation

Item 15:

"This is a man who knows how to bing. He is binging. He did the same thing yesterday. What did he do yesterday? Yesterday he _____."

STANDARD RESPONSE: binged or was binging

SUBJECTS	PERCENT STANDARD	PER-CENT NO R	NONSTANDARD PERCENT CONVERGENT	NONSTANDARD PERCENT DIVERGENT	PER-CENT U R
Negro males N = 43	binged 9.3 was binging 2.3	7.0	bing 60.5 bingen 7.0 bin 2.3 bang 4.7 banged 2.3	turned upside down 2.3	2.3
TOTAL PERCENT N = 43	11.6	7.0	76.8	2.3	2.3
Negro females N = 48	binged 20.8	2.1	bing 45.8 banged 2.1 bang 6.2 bingen 6.2 bangs 2.1 binging 2.1	gling 2.1 did the same thing 8.3	2.1
TOTAL PERCENT N = 48	20.8	2.1	64.5	10.4	2.1

CONTENT ANALYSIS OF RESPONSES ON ADAPTED
BERKO MORPHOLOGY TEST

Third Person Singular Present Tense Verb Formation

Item 11:

"This is a man who knows how to naz. He is nazzing. He does it every day. Every day he _____."

STANDARD RESPONSE: nazzes or is nazzing

SUBJECTS	PERCENT STANDARD	PERCENT NO R	NONSTANDARD PERCENT CONVERGENT	NONSTANDARD PERCENT DIVERGENT	NONSTANDARD PERCENT U R
white males N = 19	nazzes 10.5		naz 52.6 did nazzing 5.3 does nazzing 10.5 nap 5.3 nods 5.3	mop 5.3	5.3
TOTAL PERCENT N = 19	10.5		79.0	5.3	5.3
white females N = 35	nazzes 25.7 is nazzing 5.7	5.7	naz 42.9 niz 2.9 was nazzing 2.9 nazzing 8.6	dood it 2.9 mod 2.9	
TOTAL PERCENT N = 35	31.4	5.7	57.3	5.8	

CONTENT ANALYSIS OF RESPONSES ON ADAPTED
BERKO MORPHOLOGY TEST

Third Person Singular Present Tense Verb Formation

Item 11:

"This is a man who knows how to naz. He is nazzing. He does it every day. Every day he _____."

STANDARD RESPONSE: nazzes or is nazzing

SUBJECTS	PERCENT STANDARD	PER-CENT NO R	NONSTANDARD PERCENT CONVERGENT		NONSTANDARD PERCENT DIVERGENT		PER-CENT U R
Negro males N = 43	7.0	14.0	naz na... nap	48.8 11.6 2.3	cut wood buz mots	2.3 2.3 2.3	9.3
TOTAL PERCENT N = 43	7.0	14.0		62.7		6.9	9.3
Negro females N = 48	12.5	27.1	naz nazzen na...	45.8 2.1 2.1	mot do it	2.1 2.1	6.2
TOTAL PERCENT N = 48	12.5	27.1		50.0		4.2	6.2

CONTENT ANALYSIS OF RESPONSES ON ADAPTED
BERKO MORPHOLOGY TEST

Third Person Singular Present Tense Verb Formation

Item 14:

"This is a man who knows how to loodge. He is loodging. He does it every day. Every day he _____."

STANDARD RESPONSE: loodges or is loodging

SUBJECTS	PERCENT STANDARD	PERCENT NO R	NONSTANDARD PERCENT CONVERGENT	NONSTANDARD PERCENT DIVERGENT	NONSTANDARD PERCENT U R
white males N = 19	loodges 26.3	10.5	loodge 5.3 loozes 5.3 loose 10.5 loodging 10.5 lood 10.5 loods 5.3 does loodging 5.3 moods 5.3		5.3
TOTAL PERCENT N = 19	26.3	10.5	57.9		5.3
white females N = 35	loodges 31.4 is loodging 5.7		loodge 20.0 loozes 2.9 loodging 11.4 was loodging 2.9 loose 2.9 loods 8.6 looze 2.9 loodgen 2.9	bangs 2.9 do it 2.9	2.9
TOTAL PERCENT N = 35	37.1		54.5	5.8	2.9

CONTENT ANALYSIS OF RESPONSES ON ADAPTED
BERKO MORPHOLOGY TEST

Third Person Singular Present Tense Verb Formation

Item 14:

"This is a man who knows how to loodge. He is loodging. He does it every day. Every day he _____."

STANDARD RESPONSE: loodges or is loodging

SUBJECTS	PERCENT STANDARD	PER-CENT NO R	NONSTANDARD PERCENT CONVERGENT	NONSTANDARD PERCENT DIVERGENT	NONSTANDARD PER-CENT U R
Negro males N = 43	loodges 4.7	2.3	loodge 20.9 loozey 2.3 was loodging 2.3 loodgen 9.3 lood 9.3 looze 14.0 loose 4.7 loods 2.3 loo... 14.0	moots 2.3	11.6
TOTAL PERCENT N = 43	4.7	2.3	79.1	2.3	11.6
Negro females N = 48	loodges 6.2	14.6	loodge 31.2 loodgen 4.2 loo... 6.2 looze 12.5 loozes 2.1 loosey 2.1 loozen 2.1 loom 2.1 lood 2.1	do it every day 6.2 2.1	6.2
TOTAL PERCENT N = 48	6.2	14.6	64.6	8.3	6.2

CONTENT ANALYSIS OF RESPONSES ON ADAPTED
BERKO MORPHOLOGY TEST

Third Person Singular Present Tense Verb Formation

Item 20:

"This is a man who knows how to tull. He is tulling. He does it every day. Every day he _____."

STANDARD RESPONSE: tulls or is tulling

SUBJECTS	PERCENT STANDARD	PER-CENT NO R	NONSTANDARD PERCENT CONVERGENT	NONSTANDARD PERCENT DIVERGENT	NONSTANDARD PER-CENT U R
white males N = 19	tulls 57.9		tull 10.5 does tulling 5.3 tulling 15.8 cull 5.3	dug 5.3	
TOTAL PERCENT N = 19	57.9		36.9	5.3	
white females N = 35	tulls 57.1 is tulling 8.6	5.7	was tulling 2.9 tullings 5.7 tulling 8.6 tulled 2.9	is talking 2.9	5.7
TOTAL PERCENT N = 35	65.7	5.7	20.1	2.9	5.7

CONTENT ANALYSIS OF RESPONSES ON ADAPTED
BERKO MORPHOLOGY TEST

Third Person Singular Present Tense Verb Formation

Item 20:

"This is a man who knows how to tull. He is tulling. He does it every day. Every day he _____."

STANDARD RESPONSE: tulls or is tulling

SUBJECTS	PERCENT STANDARD	PER-CENT NO R	NONSTANDARD PERCENT CONVERGENT	NONSTANDARD PERCENT DIVERGENT	PER-CENT U R
Negro males N = 43	tulls 37.2	11.6	tull 20.9 was tulling 2.3 do dat tulling 2.3 tulling 2.3 tulk 2.3 told 2.3 tall 2.3 tell 2.3	can't talk 2.3	11.6
TOTAL PERCENT N = 43	37.2	11.6	37.0	2.3	11.6
Negro females N = 48	tulls 35.4	20.8	tull 14.6 tullen 8.3 toilen 2.1 tall 2.1 talling 2.1 toll 2.1	do it 6.2 do dat 2.1	4.2
TOTAL PERCENT N = 48	35.4	20.8	31.3	8.3	4.2

CONTENT ANALYSIS OF RESPONSES ON ADAPTED
BERKO MORPHOLOGY TEST

Possessive Case Formation

Item 16:

"This is a niz who owns a hat. Whose hat is it? It is the _____ hat."

STANDARD RESPONSE: niz's

SUBJECTS	PERCENT STANDARD	PERCENT NO R	NONSTANDARD PERCENT CONVERGENT		NONSTANDARD PERCENT DIVERGENT		PERCENT U R
white males N = 19	10.5	10.5	niz ning's nit	57.9 5.3 5.3	man's	5.3	5.3
TOTAL PERCENT N = 19	10.5	10.5		68.5		5.3	5.3
white females N = 35	20.0	22.9	niz	40.0	Mrs. nit bings dog's President's bing	2.9 2.9 2.9 2.9 5.7	
TOTAL PERCENT N = 35	20.0	22.9		40.0		17.3	

CONTENT ANALYSIS OF RESPONSES ON ADAPTED
BERKO MORPHOLOGY TEST

Possessive Case Formation

Item 16:

"This is a niz who owns a hat. Whose hat is it? It is the _____ hat."

STANDARD RESPONSE: niz's

SUBJECTS	PERCENT STANDARD	PERCENT NO R	NONSTANDARD PERCENT CONVERGENT		NONSTANDARD PERCENT DIVERGENT		NONSTANDARD PERCENT U R
Negro males N = 43	2.3	27.9	ning nigs ni... nip mig niz	4.7 2.3 2.3 2.3 2.3 51.1			4.7
TOTAL PERCENT N = 43	2.3	27.9		65.0			4.7
Negro females N = 48	8.3	20.8	niz	47.9	man man's table his'n hat his dogs	4.2 2.1 2.1 2.1 2.1 2.1 4.2	4.2
TOTAL PERCENT N = 48	8.3	20.8		47.9		18.9	4.2

CONTENT ANALYSIS OF RESPONSES ON ADAPTED
BERKO MORPHOLOGY TEST

Possessive Case Formation

Item 17:

"Now there are two nizzes. They both own hats. Whose hats are they? They are the _____ hats."

STANDARD RESPONSE: nizzes'

SUBJECTS	PERCENT STANDARD	PERCENT NO R	NONSTANDARD PERCENT CONVERGENT	NONSTANDARD PERCENT DIVERGENT	PERCENT U R
white males N = 19	52.6	5.3	niz 36.8		5.3
TOTAL PERCENT N = 19	52.6	5.3	36.8		5.3
white females N = 35	65.7	2.9	niz 17.1	Mrs. Niz 2.9 bings 2.9 dogs 5.7	2.9
TOTAL PERCENT N = 35	65.7	2.9	17.1	11.5	2.9

CONTENT ANALYSIS OF RESPONSES ON ADAPTED
BERKO MORPHOLOGY TEST

Possessive Case Formation

Item 17:

"Now there are two nizzes. They both own hats. Whose hats are they? They are the _____ hats."

STANDARD RESPONSE: nizzes'

SUBJECTS	PERCENT STANDARD	PERCENT NO R	NONSTANDARD PERCENT CONVERGENT		NONSTANDARD PERCENT DIVERGENT		PERCENT U R
Negro males N = 43	34.9	4.7	niz ning nig nings ni...	44.1 2.3 2.3 2.3 7.0			2.3
TOTAL PERCENT N = 43	34.9	4.7		58.0			2.3
Negro females N = 48	16.7	22.9	niz nigs ning	27.1 2.1 2.1	man's two nigger's hats his'n bing ha man dere dogs	4.2 2.1 2.1 2.1 2.1 2.1 2.1 2.1 4.2	8.3
TOTAL PERCENT N = 48	16.7	22.9		31.3		21.0	8.3

CONTENT ANALYSIS OF RESPONSES ON ADAPTED
BERKO MORPHOLOGY TEST

Possessive Case Formation

Item 18:

"This is a wug who owns a hat. Whose hat is it? It is the _____ hat."

STANDARD RESPONSE: wug's

SUBJECTS	PERCENT STANDARD	PERCENT NO R	NONSTANDARD PERCENT CONVERGENT		NONSTANDARD PERCENT DIVERGENT		NONSTANDARD PERCENT U R
white males N = 19	78.9	5.3	wug	10.5			5.3
TOTAL PERCENT N = 19	78.9	5.3		10.5			5.3
white females N = 35	77.1		wug	14.3	them niz	2.9 2.9	2.9
TOTAL PERCENT N = 35	77.1			14.3		5.8	2.9

CONTENT ANALYSIS OF RESPONSES ON ADAPTED
BERKO MORPHOLOGY TEST

Possessive Case Formation

Item 18:

"This is a wug who owns a hat. Whose hat is it? It is the _____ hat."

STANDARD RESPONSE: wug's

SUBJECTS	PERCENT STANDARD	PERCENT NO R	NONSTANDARD PERCENT CONVERGENT		NONSTANDARD PERCENT DIVERGENT		NONSTANDARD PERCENT U R
Negro males N = 43	37.2	9.3	wug	48.8	niz	2.3	2.3
TOTAL PERCENT N = 43	37.2	9.3		48.8		2.3	2.3
Negro females N = 48	43.7	6.2	wug wah wum	29.1 2.1 2.1	man hat his his'n man dere	2.1 2.1 2.1 2.1 2.1	6.2
TOTAL PERCENT N = 48	43.7	6.2		33.3		10.5	6.2

CONTENT ANALYSIS OF RESPONSES ON ADAPTED
BERKO MORPHOLOGY TEST

Possessive Case Formation

Item 19:

"Now there are two wugs. They both own hats. Whose hats are they? They are the _____ hats."

STANDARD RESPONSE: wugs'

SUBJECTS	PERCENT STANDARD	PERCENT NO R	NONSTANDARD PERCENT CONVERGENT	NONSTANDARD PERCENT DIVERGENT	NONSTANDARD PERCENT U R
Negro males N = 43	62.8	2.3	wug 25.6 rug 2.3		7.0
TOTAL PERCENT N = 43	62.8	2.3	27.9		7.0
Negro females N = 48	52.1	8.3	wug 20.8 wah 2.1	man's hat 2.1 they own's 2.1 his'n 2.1 hats 2.1 man 2.1 dem 2.1	4.2
TOTAL PERCENT N = 48	52.1	8.3	22.9	12.6	4.2

CONTENT ANALYSIS OF RESPONSES ON ADAPTED
BERKO MORPHOLOGY TEST

Possessive Case Formation

Item 19:

"Now there are two wugs. They both own hats. Whose hats are they? They are the _____ hats."

STANDARD RESPONSE: wugs'

SUBJECTS	PERCENT STANDARD	PERCENT NO R	NONSTANDARD PERCENT CONVERGENT	NONSTANDARD PERCENT DIVERGENT	NONSTANDARD PERCENT U R
white males N = 19	89.5	10.5			
TOTAL PERCENT N = 19	89.5	10.5			
white females N = 35	88.6	2.9	wug 2.9	bings 2.9	2.9
TOTAL PERCENT N = 35	88.6	2.9	2.9	2.9	2.9

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